REGIONAL ALTERNATIVE COMPLIANCE SYSTEM SUMMARY REPORT

REGIONAL COMPLIANCE FOR A SUSTAINABLE BAY

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ACRONYMS AND ABBREVIATIONS

Please refer to Glossary after Report sections for definitions of key terms.

AB	Assembly Bill
AGOL	ArcGIS Online
Bay Area	San Francisco Bay Area
BMP	best management practice
Caltrans	California Department of Transportation
CBP3	Community-Based Public Private Partnership
CCCWP	Contra Costa Clean Water Program
CE	Categorical Exemption
CEQA	California Environmental Quality Act
County	Contra Costa County
CWSRF	Clean Water State Revolving Fund
DBF	Design-Build-Finance
DBFOM-AP	Design-Build-Operate-Maintain-Availability Payment
East County Permittees	Antioch, Brentwood, Oakley, and the eastern portions of unincorporated Contra Costa County and the Contra Costa County Flood Control & Water Conservation District
EMC	Event Mean Concentrations
EPA	United States Environmental Protection Agency
Flood Control District	Contra Costa County Flood Control & Water Conservation District
Geosyntec	Geosyntec Consultants, Inc.
GI	green infrastructure
GSI	green stormwater infrastructure
HMP	hydromodification management
IGP	Industrial General Permit
LID	Low Impact Development
mg/L	milligrams per liter
MOU	Memoranda Of Understanding
MRP	Municipal Regional Stormwater NPDES Permit
MTC	Metropolitan Transportation Commission

ng/L	nanograms per liter
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
PBCs	performance-based contracts
PCBS	polychlorinated biphenyls
POTWs	publicly operated treatment works
Project	Regional Compliance For A Sustainable Bay project
RAA	Reasonable Assurance Analysis
RAC	regional alternative compliance
RFPs	Request For Proposals
RWSM	Regional Watershed Spreadsheet Model
SFEI	San Francisco Estuary Institute
SFPUC	San Francisco Public Utilities Commission
System Summary Report	Regional Alternative Compliance System Summary Report
TAC	Technical Advisory Committee
TMDLs	Total Maximum Daily Loads
TSS	total suspended solids
Water Board	San Francisco Bay Regional Water Quality Control Board
WDRs	Waste Discharge Requirements
WIFIA	Water Infrastructure Finance And Innovation Act
WQIF	Water Quality Improvement Fund

EXECUTIVE SUMMARY

E.1 Introduction

This Regional Alternative Compliance System Summary Report (System Summary Report) describes the efforts and outcomes of the United States Environmental Protection Agency (EPA) Water Quality Improvement Fund (WQIF) grant-funded Regional Compliance for a Sustainable Bay project (Project). The purpose of this Project is to develop and pilot a regional alternative compliance (RAC) system (referred to as the Contra Costa County RAC System) to achieve the water quality objectives of the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (MRP; Order No. R2-2022-0018 and future related orders). The MRP incorporates performance standards for new development and redevelopment, as well as requiring control measures to implement the San Francisco Bay Total Maximum Daily Loads (TMDLs) for polychlorinated biphenyls (PCBs) and mercury. The Contra Costa County RAC System is intended to provide a flexible, cost-effective, and scientifically defensible compliance option for addressing the green stormwater infrastructure (GSI)[1] and mercury/PCBs control requirements outlined in the MRP (Provisions C.3, C.11, and C.12, respectively). The Contra Costa County RAC System framework is intended to be easily adaptable by the other San Francisco Bay Area (Bay Area) countywide programs.

E.2 Background Information and System Drivers

The key regulatory driver for regional alternative compliance in Contra Costa County (the County) is the MRP. County Permittees covered under the 2022 MRP include the cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, unincorporated Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, along with the cities of Antioch, Brentwood, Oakley, and the eastern portions of unincorporated Contra Costa County and the Contra Costa County Flood Control & Water Conservation District (referred to as the East County Permittees). The East County Permittees are not subject to the San Francisco Bay TMDLs for PCBs and mercury, though they are subject to the Delta Methylmercury TMDL.

The San Francisco Bay Regional Water Quality Control Board (Water Board) reissued the MRP on May 11, 2022 and it became effective on July 1, 2022 (called "MRP 3"). MRP 3 includes new requirements relating to GSI in Provision C.3 as well as revised requirements for meeting TMDL load reductions in Provisions C.11 and C.12. Provision C.3.e allows for Regulated Projects, which must implement low impact development/GSI facilities to treat stormwater runoff generated from the project, the option to treat stormwater runoff off-site. Provision C.3.e includes two options for alternative compliance, and the MRP 3 Fact Sheet[2] (Attachment A, p A-124), also states:

[1] The 2015 MRP refers to GSI as "green infrastructure." MRP 3 uses "green stormwater infrastructure."
[2] The Fact Sheet for the MRP 3 includes cited regulatory and legal references and additional explanatory information in support of the requirements of the MRP.

"…the Permittees [may] submit new information for an alternative compliance program for exchanges of impervious surface treatment credits at the regional, county, and/or municipal level…"

Consistent with the above, this RAC System Summary Report will be submitted to the Water Board to seek approval of the Contra Costa County RAC System (Contra Costa County RAC System) as another alternative compliance option under MRP Provision C.3.e.

The following key objectives for the Contra Costa County RAC System were developed with input from the Project Steering Committee (comprised of municipal representatives guiding development of the Contra Costa County RAC System) and Advisory Committee (composed of advisory stakeholders that have an interest in future alternative compliance projects):

1. Flexible compliance with the MRP, particularly Provision C.3.b (Regulated Projects), using the Alternative Compliance Provision C.3.e, but potentially also Provision C.3.j (Green Infrastructure Planning and Implementation);
2. Cost efficiencies through implementation of larger stormwater capture projects that provide treatment at a lower cost per acre as well as lower maintenance and inspection costs;
3. Targeted implementation of facilities that can provide higher load reduction benefits toward compliance with the San Francisco Bay PCBs and mercury TMDLs to achieve reductions in MRP Provisions C.11 and C.12;
4. Implementation (i.e., funding, construction, and maintenance) of stormwater capture and water quality improvement projects that provide multiple benefits, including benefits ancillary to those relating to MRP Provisions C.3, C.11, and C.12; and
5. Flexibility to adapt the system to meet future water quality needs.

The proposed Contra Costa County RAC System is expected to qualify as a California Environmental Quality Act (CEQA) compliant document prepared in lieu of an environmental impact report (14 California Code of Regulations § 21080.5[b][2]). Water Board adoption of the Contra Costa RAC System and amendment to the MRP is therefore not anticipated to require additional CEQA review. Implementation of the Contra Costa County RAC System by individual Permittees will require adoption of implementing procedures, such as an ordinance, which is a discretionary action that meets the definition of a project under the CEQA. Because the Contra Costa County RAC System will provide a net environmental benefit for development projects, adoption of an ordinance to implement the RAC System is expected to meet the criteria for a CEQA Categorical Exemption. To address project-specific requirements for CEQA mitigation, the Contra Costa County RAC System includes a certification system that would provide substantial evidence that the mitigation is not deferred, is enforceable, is proportional to the impact being addressed, and have a clear nexus to the impact. Projects implemented as part of the RAC System would be subject to CEQA review, which would need to be completed prior to construction.

E.3 Proposed Contra Costa County RAC System Overview

The proposed Contra Costa County RAC System combines elements from in-lieu payment and (preliminarily) pay-for-performance/Community-Based Public Private Partnership (CBP3) programs. In accordance with MRP Provision C.3.e, participation in the Contra Costa County RAC System would provide Permittees and Regulated Project developers alternative compliance to MRP Provision C.3.b and benefits relating to Provisions C.11 (Mercury controls), C.12 (PCBs Controls), and, as opportunities arise, C.10 (Trash Load Reduction). The Contra Costa County RAC System is intended to be primarily established under MRP 3 Provision C.3.e. These RAC System documents are submitted to the Water Board for a permit amendment, an option identified in the MRP 3 Fact Sheet, and/or confirmation that they are consistent with current MRP 3 C.3.e language. If approved by the Water Board, the Contra Costa County RAC System would be formally recognized under or as compliant with MRP 3 Provision C.3.e.

The Contra Costa County RAC System creates an alternative pathway for C.3.b Regulated Projects to achieve compliance in accordance with MRP Section C.3.e. Instead of constructing Low Impact Development (LID)/GSI facilities on-site, the Regulated Project (i.e., RAC System "buyer") would make a compliance purchase that would cover capital costs for "Off-Site GSI Projects" that achieve C.3 compliance, and pay an annual ongoing Operations and Maintenance (O&M) fee for the long-term maintenance of the Off-Site GSI Projects. The O&M fee would be levied on the Regulated Project's onsite parcel. Although the Contra Costa County RAC System has been designed to achieve alternative compliance for Regulated Projects, Permittees seeking purchase of GSI retrofits could also participate as RAC System buyers.

The collected compliance purchase payments (i.e., for capital costs) would be pooled to fund Off-Site GSI Projects located on public or private land in urban areas within Contra Costa County that are certified and maintained through the Contra Costa County RAC System. Collected O&M fees would fund Off-Site GSI Project maintenance. Implementation of the Contra Costa County RAC System is expected to produce TMDL pollutant load reduction benefits through these Off-Site GSI Projects, which are anticipated to be primarily located in older urban and industrial areas demonstrated to have higher levels of PCBs (San Francisco Estuary Institute [SFEI], 2018; Contra Costa Clean Water Program [CCCWP], 2020). The proposed Contra Costa County RAC System is expected to provide:

- Flexible compliance for Permittees and Regulated Project owners;
- Cost savings through economies of scale, realized through implementation of larger regional Off-Site GSI Projects as well as potential cost savings through pay-for-performance or CBP3 contracting mechanisms rather than traditional procurement; and
- Additional water quality and environmental benefits and related TMDL compliance benefits through retrofit of untreated older urban and industrial areas with higher pollutant loading, in addition to the equivalent or increased water quality benefit requirement for Regulated Projects. Due to past development patterns in Contra Costa County, state-identified "Disadvantaged Communities" (DACs) generally overlap with older urban and industrial areas; therefore, retrofits in these areas could provide additional environmental justice benefits.

The Contra Costa County RAC System would be implemented in multiple phases:

1. Phase 1, Initial Pilot Exchanges, occurring concurrently with this Project. This phase entails piloting the RAC System through one or two exchanges and will result in reporting any issues and/or adjustments needed to streamline the System.
2. Phase 2 is anticipated to be a five-year initial roll-out of the RAC System. The objective of Phase 2 is wider acceptance and implementation of the RAC System across Contra Costa County. This phase may include additional studies, agreements, and mechanisms for contracting within Contra Costa County.
3. Phase 3 and beyond would begin after Phase 2 lessons learned have been addressed through RAC System amendments. In this phase, the RAC System would be established and fully operating, with adaptive management procedures in place.

The Contra Costa County RAC System would be primarily administered by the CCCWP, with additional aspects managed by County Permittees and certain fiduciary elements managed by the Contra Costa County Flood Control & Water Conservation District (Flood Control District). The CCCWP administrators are expected to include at least two specific entities:

1. The RAC Subcommittee, which is expected to be made up of volunteer Permittee stormwater program representatives that will make decisions regarding the Contra Costa County RAC System.
2. The RAC System Administrator, who will be responsible for management, financial administration, and reporting requirements for the Contra Costa County RAC System.

Other Contra Costa County RAC System administrators include:

1. County Permittees, which would manage Regulated Project applicants and compliance unit providers that construct Off-Site GSI Projects within their jurisdictional boundaries, facilitate exchanges, and facilitate and/or perform Off-Site GSI Project implementation, certification, O&M, and verification, and
2. The Flood Control District, which is anticipated to act as the fiduciary agent for the ongoing O&M fee.

E.4 Contra Costa County RAC System Compliance Unit and Control Measures

For the purposes of this report, the Contra Costa County RAC System metric is referred to as a "compliance unit." This is a unit of exchange that can be purchased by buyers seeking alternative compliance with the MRP.

With the use of the compliance purchase approach modeled on the MRP Provision C.3.e in-lieu fee option, the Contra Costa County RAC System compliance unit can be defined using language in subdivision (2) of MRP Provision C.3.e.i as requiring three elements:

1. Hydraulically-sized treatment in accordance with Provision C.3.d with LID/GSI treatment measures of an **equivalent quantity of both stormwater runoff and pollutant loading**, which is referred to as **"Equivalent Acres Greened;"**
2. A net environmental benefit; and
3. A proportional share of the O&M costs of the Off-Site GSI Project, which is referred to as an **"Ongoing O&M fee."**

Equivalent Acres Greened compliance units generated by Off-Site GSI Projects are calculated based on the Runoff Generating Acres captured and treated by (i.e., tributary to) the Off-Site GSI Projects. Runoff Generating Acres are defined as directly connected impervious areas and 10% of directly connected pervious areas. Each Equivalent Acre Greened compliance unit will have associated compliance unit attributes for rainfall zone and land use (or land use mix), along with impervious area, based on the drainage area(s) of the Off-Site GSI Project.

Allowable treatment types for Off-Site GSI Projects are the systems considered "LID" per the MRP and allowable in in the Contra Costa County Stormwater C.3 Guidebook 7th Edition (CCCWP, 2017), namely bioretention facilities, infiltration facilities, and stormwater capture and use.

For Regulated Projects requiring demonstration of equivalent volume and pollutant loading capture, the required Equivalent Acres Greened to be purchased are calculated as the Runoff Generating Acres for which the owner is seeking alternative compliance, multiplied by a Rainfall Ratio and a Pollutant Ratio. For non-Regulated project buyers (e.g., Permittees seeking Equivalent Acres Greened to meet GSI retrofit needs), the equivalency demonstration is not required and the Equivalent Acres Greened compliance units for purchase are calculated based on the Runoff Generating Acres (or impervious acres) the buyer wishes to purchase.

When Regulated Projects choose to use the Contra Costa County RAC System alternative compliance approach, a net environmental benefit will be provided through a "NEB Ratio" applied to the compliance purchase. The capital compliance purchase is calculated as follows:

$$Purchase_{Compliance} = (Equivalent\ Acres\ Greened \times NEB\ Ratio) \times Cost_{EAG} + Payment_{Administrative}$$

Where:

Equivalent Acres Greened	=	Required compliance units for equivalency (for Regulated Projects) or desired for purchase (for non-Regulated project buyers)
NEB Ratio	=	1.1 for Regulated Projects and 1.0 for non-Regulated Project purchases.
$Cost_{EAG}$	=	Equivalent Acre Greened unit cost
$Payment_{Administrative}$	=	Administrative payment

Discounts may be applied to the NEB Ratio for certain exchanges that provide an increased net environmental benefit through location or project features.

E.5 System Requirements

Eligible Contra Costa County RAC System buyers are primarily expected to include private and public entity Regulated Project owners/developers seeking compliance with MRP Provisions C.3.c (LID). Contra Costa County RAC System buyers could also include Permittees seeking a means to purchase GSI retrofit acres for C.3.j. Other NPDES-regulated entities could be included as Contra Costa County RAC System buyer participants if opportunities arise as part of Phase 2, or during Phase 3 of the System.

Off-Site GSI Projects would be constructed to generate Equivalent Acres Greened compliance units for sale to the buyers. Off-Site GSI Projects are anticipated to be implemented in multiple phases: (1) design, (2) preliminary approval of appropriate sizing and design to generate compliance units available for exchange (optional), (3) construction, (4) certification, and (5) compliance unit calculation and confirmation. Any public or private entity that can operate within the constraints of the Contra Costa County RAC System and take actions that result in a demonstrable generation of Equivalent Acres Greened may participate in the implementation of Off-Site GSI Projects as compliance unit providers.

The design, implementation, and quantification of benefits[3] of Off-Site GSI Projects must be certified upon project completion by the jurisdiction in which the Off-Site GSI Project is located. The Off-Site GSI Project certification process is proposed to follow current Countywide processes, which are consistent with MRP requirements. In certain cases, Equivalent Acres Greened compliance units may be sold up to three years in advance Off-Site GSI Project construction as allowed by the MRP. Once the compliance units generated by an Off-Site GSI Project are approved or certified, they will be available within the Contra Costa County RAC System for exchange, and a buyer can purchase them.

Ongoing O&M of constructed Off-Site GSI Projects is expected to be managed and performed either by the jurisdiction (e.g., City or unincorporated County) in which the Off-Site GSI Project is located or by a contracted compliance unit provider as part of a pay-for-performance or CBP3 process. Ongoing O&M verification of the Off-Site GSI Project's performance, including required site inspections, will also be conducted by the jurisdiction in which the Off-Site GSI Project is located. The Off-Site GSI Project verification process is consistent with current Countywide processes, which follows current MRP requirements.

E.6 Compliance Purchase and O&M Assessment Cost Bases

The Contra Costa County RAC System will be primarily funded on an ongoing basis through compliance purchases. While some "Equivalent Acres Greened" compliance units may be exchanged in advance of Off-Site GSI Project construction, allowing for advance funding, this would only be allowed when there is high certainty that the Off-Site GSI Project would be constructed. Given uncertainty around implementation timelines and the potential for Off-Site GSI Projects to change for a variety of reasons, however, most Off-Site GSI Projects would likely need to be funded or financed upfront to avoid compliance unit risks in the RAC System.

[3] It is expected that preliminary quantification of benefits (including Equivalent Acres Greened compliance metrics generated) would occur as part of preliminary review processes and would be confirmed through certification.

A source of upfront funding or financing will be needed to allow for compliance unit generating Off-Site GSI Projects to be implemented.

Compliance purchases made by buyers are calculated using a unit cost for Equivalent Acres Greened compliance units and an administrative payment. It is assumed that the Equivalent Acre Greened unit cost ($Cost_{EAG}$) would be the same for all Contra Costa County RAC System buyers and would represent the average cost to generate an Equivalent Acre Greened compliance unit from Off-Site GSI Projects implemented through the Contra Costa County RAC System. The Equivalent Acre Greened unit cost would be revisited and potentially adjusted on a regular basis. Administrative payments would be developed through fee studies when fee schedules are updated by Permittees and the CCCWP and would cover all staff and/or consultant hours needed to perform the administrative functions. The payment amounts are anticipated to be informed by findings of Phase 1 of the Contra Costa County RAC System.

Participating buyers would voluntarily agree to pay an annual ongoing O&M fee per Equivalent Acres Greened compliance unit at a fixed rate with escalation for inflation. The ongoing O&M fee would cover O&M tasks along with the Flood Control District's administrative costs for maintaining the O&M needs of the Contra Costa County RAC System. The annual ongoing O&M fee would be captured through the property tax associated with the Regulated Project parcel.

E.7 Risk and Uncertainty Management

Identified sources of uncertainty for the Contra Costa County RAC System include: the compliance unit equivalency, through variability of precipitation, pollutant concentration, control measure effectiveness and performance; the costs of constructing and maintaining Off-Site GSI Projects; and market demand for purchasing Equivalent Acres Greened compliance units.

The Contra Costa County RAC System utilizes several mechanisms to manage identified risk and uncertainty that may affect Permittees, compliance unit providers, and environmental outcomes. The Contra Costa County RAC System includes factors in the compliance purchase calculation to provide equivalency, including a rainfall equivalency factor and a pollutant loading equivalency factor. While treatment through control measures could be expected to be variable, any variability in the outcomes of the treatment control measures used for Off-Site GSI Projects is expected to occur at the same rate as those used for on-site Regulated Project treatment. Off-Site GSI certification and ongoing verification processes are intended to provide some certainty that the facility is designed and installed consistent with RAC System requirements and is performing correctly on an ongoing basis.

Off-Site GSI Project construction and maintenance costs are used to set compliance purchase prices and ongoing O&M fees. As these costs can vary widely and change from year to year, the RAC System would average Off-Site GSI Project implementation costs across the RAC System to mitigate design and construction cost variability and allow equitable sale of compliance units. Additionally, increases in Equivalent Acre Greened unit costs would be allowed on an ongoing basis. Similarly, the RAC Administrator will conduct regular examination of the sufficiency of O&M fees and may increase these fees as needed to cover costs.

Market demand is subject to many factors. The RAC System has been designed such that larger-scale regional stormwater capture facilities could be implemented and generate compliance units for exchange. As larger scale facilities have been demonstrated to be more cost effective than smaller scale facilities, it is expected that RAC System participants would realize cost savings for their compliance needs. Compliance cost savings are likely to encourage demand.

E.8 Adaptive Management

Although Phase 2 of the Contra Costa County RAC System has a defined scope for its participants, compliance units, and jurisdiction, the RAC System is envisioned to provide a framework for entities across the San Francisco Bay area to meet water quality goals while generating economic opportunities. Key considerations for scaling up the Contra Costa County RAC System would be identified during regular RAC System evaluation.

It is anticipated that the CCCWP RAC Subcommittee and System Administrator would regularly review, approve, and, if needed, revise aspects of the Contra Costa County RAC System. Preliminarily, it is expected that minor programmatic changes to the Contra Costa County RAC System would be updated in internal RAC System Documents but would not require policy related changes. However, any changes to the RAC System that could affect water quality outcomes would require updates to permit language during the normal permit reissuance processes or an amendment to the MRP.

Adaptive management of the implementation of the Off-Site GSI Projects would be required at both the project level and programmatically as more Projects are constructed. At the programmatic level, the Contra Costa County RAC System Fund may be evaluated regularly by the CCCWP RAC System Administrator to address issues including, but not limited to, Contra Costa County RAC System costs exceeding compliance purchase revenue. The Contra Costa County RAC System must include a process to regularly evaluate the sufficiency of the compliance purchase amount—particularly the Equivalent Acre Greened unit cost and the administrative payment—and to adjust the compliance purchase amounts as needed.

E.9 Overview of Contra Costa County RAC System Tracking Tool

Tracking of Off-Site GSI Projects, including certification, Equivalent Acres Greened compliance units generated, compliance units exchanged, and ongoing verification of Off-Site GSI Projects will be tracked using the Contra Costa County RAC System Tracking Tool. Regulated Project participants will also be tracked in the County's current ArcGIS Online (AGOL) stormwater tracking tool, which is used for all C.3 projects.

A RAC System Tracking Tool is being developed for the Contra Costa County RAC System by the SFEI. The RAC System Tracking Tool will include a comprehensive database to track components of the RAC System and relate RAC System components to existing tracking tools. The components tracked will include:

- Information about Off-Site GSI Projects, including certification, verification, and compliance unit tracking. Project drainage area size and characteristics would also be tracked.

- Regulated Project information from the County's existing AGOL database. Project drainage area size and characteristics would also be tracked.
- Exchange Information, including compliance units exchanged and compliance purchase amounts.
- O&M fee tracking, potentially linked to Flood Control District tracking systems.

The System Tracking Tool will include an accounting system that provides tracking of generated compliance units, compliance purchase amounts, and whether and when payments were made. Reporting will be completed by the System Administrator in accordance with the requirements of the Water Board and MRP 3. Information regarding implemented Off-Site GSI Projects, certification, verification, exchanges, and ongoing O&M will be readily available in the System Tracking Tool. It is anticipated that this data would be extracted for annual reports using a defined process based on established reporting requirements.

E.10 Contra Costa County RAC System Template Documents

The Contra Costa County RAC System templates and forms were designed to build on existing processes, forms, and tracking systems where possible. The CCCWP has developed several standard templates and forms for Regulated Project design review, construction inspection, and O&M verification that have been incorporated into the documents required for RAC System certification, verification, and tracking.

The Contra Costa County RAC System templates/forms document all aspects of the RAC System, including:

- The Regulated Project's use of the alternative (off-site) compliance option;
- The Off-Site GSI Project, including:
  - Facility attributes;
  - Design review, construction inspection, and certification;
  - Ongoing O&M and O&M verification;
- Exchange details, including total compliance units and equivalency; and
- Necessary agreements and/or resolutions among participants in the System.

E.11 Contra Costa County RAC System Next Steps

This RAC System Summary Report describes the proposed Contra Costa County RAC System structure that is envisioned to be implemented during Phase 2 (i.e., initial System roll-out). Following completion of this RAC System Summary Report and prior to initiating Phase 2, one to two Phase 1 pilot exchanges will be conducted to test key components of the proposed Contra Costa County RAC System structure. Any lessons learned during the Phase 1 pilot exchanges will be integrated into the Final Program Documents used to guide Phase 2, anticipated to begin in 2023. Phase 2 will be launched after submittal of a formal package to include or approve the RAC System as an option under Provision C.3.e.

It is envisioned that Phase 2 will include required studies, approvals, and agreements and will result in RAC System exchanges by 2026. After the Phase 2 establishment period and implementation of required RAC System adjustments and amendments, the RAC System will shift into Phase 3, during which the RAC System will be fully operational. Based on the anticipated schedule, the Contra Costa County RAC System will be in Phase 3, fully established and operational, by 2029 to 2030.

1. INTRODUCTION

This Regional Alternative Compliance System Summary Report (System Summary Report) describes the efforts and outcomes of the United States Environmental Protection Agency (EPA) Water Quality Improvement Fund (WQIF) grant-funded Regional Compliance for a Sustainable Bay project (Project). The purpose of this Project is to develop and pilot a regional alterative compliance (RAC) system (referred to as the Contra Costa County RAC System) to achieve the water quality objectives of the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (MRP; Order No. R2-2018-0022 and future related orders). The MRP incorporates performance standards for new development and redevelopment, as well as requiring control measures to implement the San Francisco Bay Total Maximum Daily Loads (TMDLs) for polychlorinated biphenyls (PCBs) and mercury. The Contra Costa County RAC System is intended to provide a flexible, cost-effective, and scientifically defensible compliance option for addressing the green stormwater infrastructure[4] (GSI) and mercury/PCBs control requirements outlined in the MRP (Provisions C.3, C.11, and C.12, respectively). The Contra Costa County RAC System framework is intended to be easily adaptable by the other San Francisco Bay Area (Bay Area) countywide programs.

This RAC System Summary Report has been developed through technical and legal analyses and discussions with technical, regulatory, legal, and stakeholder advisors and a Permittee steering committee. The Steering Committee and the Consultant Team comprise the Project Team. Project advisory committees engaged in the development of this Summary Report include:

- **Steering Committee**—The Steering Committee is comprised of representatives from the Cities of San Pablo, Walnut Creek, and Richmond, and Contra Costa County, who are guiding development of the Contra Costa County RAC System.
- **Advisory Committee**—The Advisory Committee is comprised of advisory stakeholders that have an interest in (regional) alternative compliance projects. The Advisory Committee includes representatives from Alameda County, San Mateo County, Santa Clara County, Solano County (Fairfield-Suisun and Vallejo), Marin County, Sonoma County, and Napa County stormwater programs, along with the California Department of Transportation (Caltrans), Port of Oakland, and San Francisco Public Utilities Commission (SFPUC) stormwater staff.
- **Technical Advisory Committee (TAC)**—The TAC is comprised of technical, regulatory, and legal experts that advise on specific issues or questions that arise as part of the Project.

[4] Green Stormwater Infrastructure (GSI) is infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, GSI refers to the patchwork of natural areas that provides habitat, localized flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, GSI refers to stormwater management systems that mimic nature by capturing and storing water. When used for Regulated Project compliance under MRP Provision C.3, GSI must be engineered and sized to meet permit specifications.

This RAC System Summary Report describes the key Contra Costa County RAC System drivers and objectives, the proposed RAC System approach and rationale, and key definitions and considerations for RAC System components. This Summary Report includes the following sections:

- Section 2 describes Contra Costa County RAC System drivers and regulatory background.
- Section 3 provides an overview of the proposed Contra Costa County RAC System, including the rationale for the alternative compliance approach, System components, and administrative roles.
- Section 4 includes a description of the Contra Costa County RAC System metric and allowable control measures.
- Section 5 provides details regarding Contra Costa County RAC System requirements, including eligibility rules and certification and verification processes.
- Section 6 describes the proposed compliance purchase cost setting approach.
- Section 7 discusses Contra Costa County RAC System risk and uncertainty considerations and management.
- Section 8 introduces Contra Costa County RAC System adaptive management.
- Section 9 provides an overview of the Contra Costa County RAC System Tracking Tool.
- Section 10 describes key Contra Costa County RAC System templates.

2. BACKGROUND INFORMATION

2.1 RAC System Drivers

The key regulatory driver for regional alternative compliance in Contra Costa County (the County) is the MRP. The MRP and other Contra Costa County RAC System drivers are described in the following sections.

2.1.1 Municipal Regional Permit

NPDES permit requirements associated with Phase I municipal stormwater programs and Permittees in the Bay Area are included in the MRP, which was issued by the San Francisco Bay Regional Water Quality Control Board (Water Board) to 76 entities, including cities, counties, and flood control districts, in 2009 (MRP 1.0), reissued in 2015 (MRP 2.0), revised in 2019, and most recently reissued in 2022 (MRP 3). Contra Costa County Permittees covered under the 2022 MRP reissuance include the cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, unincorporated Contra Costa County, the Contra Costa County Flood Control & Water Conservation District (Flood Control District), and the cities of Antioch, Brentwood, Oakley. The 2019 MRP revision added the cities of Antioch, Brentwood, Oakley, and the eastern portions of unincorporated Contra Costa County and the Contra Costa County Flood Control & Water Conservation District (referred to as "the East County Permittees"). The East County Permittees are located within the jurisdiction of the Central Valley Regional Water Quality Control Board (Region 5) and were previously covered under a separate Joint Municipal NPDES Permit titled "East Contra Costa County Municipal NPDES Permit." See Figure 1 for the County, Permittee, and Regional Board jurisdictional boundaries. The East County Permittees are not subject to the San Francisco Bay TMDLs for PCBs and mercury, though they are subject to the Delta Methylmercury TMDL.

MRP Provision C.3 requires specifies categories of new development and redevelopment projects (i.e., Regulated Projects) that must include low impact development (LID) source control, site design, on-site stormwater treatment (Provisions C.3.c-d), and hydromodification management measures (Provision C.3.g). Provision C.3 also specifies the certification and operation and maintenance (O&M) requirements for these measures (Provision C.3.f and C.3.h). Allowable LID stormwater treatment measures (also known as green infrastructure [GI] or GSI) for Regulated Projects are stormwater treatment facilities that capture stormwater for harvesting and use, infiltration, evapotranspiration, and/or biotreatment, and must be sized per numeric sizing criteria specified in the MRP. MRP Provision C.3.e allows Regulated Projects the option to treat stormwater runoff off-site. Provision C.3.e includes two options for alternative compliance:

> *"The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:*
>
> ***(1) Option 1: LID Treatment at an Offsite Location***

Treat a portion (this portion may be zero; Permittees should treat as much onsite as possible) of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility and treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an Offsite Project[5] in the same watershed[6]. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provisions C.3.d and C.3.g, as appropriate) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) Option 2: Payment of In-Lieu Fees

Treat a portion (this portion may be zero; Permittees should treat as much onsite as possible) of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility and pay equivalent in-lieu fees[7] to treat the remaining portion of the Provision C.3.d runoff (and comply with Provision C.3.g, as appropriate) with LID treatment measures at a Regional Project[8] or Offsite Project. The Regional Project must achieve a net environmental benefit, through a net increase in impervious surface treated, and/or a net reduction in flow and/or pollutant load.

(3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above (Options 1 and 2), all Offsite Projects and Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of an Offsite Project or Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval."

The MRP 3 Attachment A, Fact Sheet[9] (p A-124), also states:

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[5] MRP 3 includes the following definition: "***Offsite Project*** *– A stormwater treatment facility that discharges into the same watershed as the Regulated Project and is located at a different public or private parcel or property (e.g., right-of-way) from the Regulated Project.*"

[6] "The same watershed" is assumed for the purposes of this System Summary Report to be the San Francisco Bay watershed.

[7] MRP 3 includes the following definition: "***In-lieu fees*** *– Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Offsite Project or Regional Project*."

[8] MRP 3 includes the following definition: "***Regional Project*** *– A regional or municipal stormwater treatment facility that captures runoff from a drainage area larger than the parcel on which it is located and discharges into the same watershed as the Regulated Project.*"

[9] The MRP 3 Fact Sheet includes cited regulatory and legal references and additional explanatory information in support of the requirements of the MRP.

> *"During the Permit term, the Permittees may submit new information for an alternative compliance program for exchanges of impervious surface treatment credits at the regional, county, and/or municipal level, resulting in offsite treatment or payment for equivalent offsite compliance for 100 percent of the required Provision C.3.c-d stormwater runoff (and Provision C.3.g, as appropriate).*
>
> *Any such program should include at least the following: a clear organizational framework; demonstration of the treatment of an equivalent quantity of both stormwater runoff and pollutant loading (e.g., through the equivalent or net increase in impervious surface treated, and the equivalent or net reduction in flow and/or pollutant load, but not necessarily in the same watershed) and the achievement of net environmental benefit; an accounting and reporting system; a process for collection and timely use of funds; compliance with Provisions C.3.c-d and C.3.f-h; program oversight by an entity or entities; and expectations for timing and location. If or when such a program proposal is submitted, the Water Board will consider the new information and may consider amending the Permit to include a third option in Provision C.3.e.i that formally recognizes and allows the program specified in the proposal. This is in part a response to the City of San Pablo-led U.S. EPA Water Quality Improvement Fund (WQIF)-funded Regional Compliance for a Sustainable Bay project, which is investigating such a program that would facilitate alternative compliance exchanges between Permittees within Contra Costa County, but may be of interest in other counties and regionally."*

Consistent with the above, this RAC System Summary Report is submitted to the Water Board as part of a formal process seeking approval of the Contra Costa County RAC System as another alternative compliance option under Provision C.3.e.

The program components that fulfill the required elements listed in the MRP 3 Fact Sheet are highlighted throughout this RAC System Summary Report and are summarized in Table 1.

Table 1: Summary of Proposed Program Submittal Requirements

MRP 3 Fact Sheet Requirement for Proposed Program Submittal	Location(s) in System Summary Report
A clear organizational framework	• Section 3.1 and 3.3
Demonstration of the treatment of an equivalent quantity of both stormwater runoff and pollutant loading (e.g., through the equivalent or net increase in impervious surface treated, and the equivalent or net reduction in flow and/or pollutant load, but not necessarily in the same watershed) and the achievement of net environmental benefit	• Section 4
An accounting and reporting system	• Section 5.6 • Section 5.7 • Section 9
A process for collection and timely use of funds	• Section 5.4 • Section 6.3 • Section 6.5
Compliance with Provisions C.3.c-d and C.3.f-h	• Section 3.2.4 • Section 4.2 • Section 5.6 • Section 5.7
Program oversight by an entity or entities	• Section 3.4 • Section 8.2 • Section 8.3
Expectations for timing and location	• Section 3.3 • Section 11

In addition to LID/GSI requirements for Regulated Projects, MRP 3 includes specific numeric goals for acres to be retrofit with GSI for each Permittee. Permittees may meet their total individual retrofit requirements on a Countywide basis, although each Permittee must implement a GSI project treating no less than 0.2 acres of impervious surface. The Countywide GSI retrofit requirement is 57.32 acres. Non-Regulated projects and green infrastructure beyond the minimum required by Provision C.3.d for a Regulated Project may be counted towards the numeric GSI retrofit requirements. If a non-Regulated Project or Regulated Project (beyond the minimum required by Provision C.3.d) GSI/LID is later used as part of an Alternative Compliance exchange to offset the treatment required by a Regulated Project, then it may no longer be counted towards the Provision C.3.j.GSI retrofit requirements.

MRP Provisions C.11 and C.12 require implementation of control programs for mercury and PCBs, respectively, consistent with the San Francisco Bay mercury and PCBs TMDLs. The required control programs include load reduction assessment, source control measures, treatment control measures, measures to reduce risk to consumers of Bay Area fish, and reporting on all these measures. Challenges with cost-efficient compliance with Provisions C.11 and C.12 treatment control requirements on an individual Permittee basis is another driver for the Contra Costa County RAC System, as described in Section 2.1.2.

The MRP 3 Provisions C.11.c and C.12.c require the Permittees to implement treatment control measures, diversion to wastewater treatment facilities, GSI associated with redevelopment, or

other control measures to achieve mercury and PCBs load reductions. Contra Costa County Permittees must comply with this provision through implementation of control measures treating 664 acres of old industrial land use area (Countywide) using 70 percent efficient treatment control measures, or a larger area using less effective control measures.

The East County Permittees are not subject to the PCBs and mercury TMDLs, although they have been implementing PCBs and mercury control measures in collaboration with the Contra Costa County Permittees located within the Water Board Region 2 jurisdiction. MRP 3 Provision C.19 incorporates requirements for the East County Permittees related to the Sacramento-San Joaquin Delta Estuary Methylmercury TMDL. The East Contra Costa Methylmercury Control Measure Plan and Reasonable Assurance Analysis report describes a plan and schedule for reducing East County Permittee methylmercury loads (Geosyntec Consultants, Inc. [Geosyntec], 2022). The East County Permittees need to implement GSI projects and other control measures within the Marsh Creek watershed to make progress towards the Delta methylmercury TMDL waste load allocation.

In addition to Provisions C.3, C.11, C.12, and C.19 discussed above, the Contra Costa County RAC System could provide localized benefits relating to Provision C.10, Trash Load Reduction requirements, though these benefits would not be exchanged through the RAC System.

2.1.2 Additional System Drivers

Additional Contra Costa County RAC System drivers include the limited resources available to manage stormwater across the County and the high cost to achieve compliance with MRP requirements. The estimated costs for Permittees to comply with MRP 3 are significant. The estimated cost to treat the public GSI project area identified in the Contra Costa TMDL Control Measure Plan ranges from $915 million to $1.884 billion (Contra Costa Clean Water Program [CCCWP], 2020). The Permittees are faced with these compliance costs even while municipal stormwater program funding is typically inadequate to cover existing storm drain infrastructure maintenance. A system that could provide compliance cost savings and additional benefits would be helpful for Countywide stormwater water quality and infrastructure management.

In addition to limited financial resources, the PCBs TMDL presents unique challenges when considering compliance at an individual Permittee level. Although the Permittees are allocated a PCBs waste load by the TMDL on a population basis, according to monitoring and regional modeling conducted by the San Francisco Estuary Institute (SFEI) and modeling conducted for the County Reasonable Assurance Analysis (RAA), the PCBs load is not distributed evenly across the County (Geosyntec, 2019; CCCWP, 2020). As a result, targeted management of PCBs is a more efficient and effective means of meeting compliance requirements, rather than investing in control measures based on jurisdictional population. Targeted management would entail Countywide investment of PCBs control measures in specific locations that achieve the highest load reductions. A regional alternative compliance approach (e.g., the proposed Contra Costa County RAC System) that can provide economies of scale while supporting targeted treatment in areas of higher PCBs loading would enable a more regionally efficient means of addressing the TMDL compliance targets.

2.2 Contra Costa County RAC System Objectives

The following key objectives for the Contra Costa County RAC System were developed with input from the Steering Committee and Advisory Committee:

1. Flexible compliance with the MRP, particularly Provision C.3.b (Regulated Projects), using the Alternative Compliance Provision C.3.e, but potentially also Provision C.3.j (Green Infrastructure Planning and Implementation);
2. Cost efficiencies through implementation of larger stormwater capture projects that provide treatment at a lower cost per acre as well as lower maintenance and inspection costs;
3. Targeted implementation of facilities that can provide higher load reduction benefits toward compliance with the San Francisco Bay PCBs and mercury TMDLs to achieve reductions in MRP Provisions C.11 and C.12;
4. Implementation (i.e., funding, construction, and maintenance) of stormwater capture and water quality improvement projects that provide multiple benefits, including benefits ancillary to those relating to MRP Provisions C.3, C.11, and C.12; and
5. Flexibility to adapt the system to meet future water quality needs.

2.3 Environmental Review Approach

The California Environmental Quality Act (CEQA) requires state and local government agencies to inform decision makers and the public about potential environmental impacts of proposed projects, and to mitigate any significant environmental effects to the extent feasible. CEQA defines a "project" as an activity that: (1) is a discretionary action by a governmental agency, and (2) will either have a direct or reasonably foreseeable indirect impact on the environment (Pub. Res. Code, § 21065). This section discusses the approach to CEQA compliance for each of the following stages of the Contra Costa County RAC System:

1. Water Board approval of the Contra Costa County RAC System (i.e., through a permit amendment or letter recognizing the RAC System is consistent with current MRP Provision C.3.e).
2. Adoption of local ordinances or other regulatory mechanism that allows implementation of the Contra Costa County RAC System.
3. Using the Contra Costa County RAC System as CEQA mitigation for development projects.
4. Approval of projects that will generate "compliance units" for exchange under the Contra Costa County RAC System.

2.3.1 Water Board Approval of the Contra Costa County System

In order to implement the Contra Costa County RAC System, the Water Board would need to amend the MRP to approve the Contra Costa County System as an alternative compliance option under Provision C.3.e. The Water Board amendment to the MRP would require compliance with

CEQA. The proposed Contra Costa County RAC System could be used as a CEQA compliant document in lieu of an environmental impact report, which would satisfy Water Board CEQA compliance (14 California Code of Regulations § 21080.5[b][2]). Water Board adoption of the Contra Costa RAC System is therefore not anticipated to require additional CEQA review.

2.3.2 CEQA Considerations for Adoption of Local Ordinance

Regulated development projects must comply with MRP Provision C.3 by implementing on-site mitigation (i.e., LID/GSI stormwater control measures) or approved off-site mitigation on a case-by-case basis. Implementation of the Contra Costa County RAC System would require adoption of implementing procedures by the MRP Permittees (i.e., the towns and cities within Contra Costa County, County Costa County, and the Flood Control District), such as an ordinance, that would allow use of the Contra Costa County RAC System for MRP compliance. The adoption of an ordinance or other regulatory mechanism to implement the Contra Costa County RAC System is a discretionary action that meets the definition of a project under CEQA because the activity is capable of causing a direct or reasonably foreseeable indirect physical change in the environment.[10] MRP Provision C.3.e specifically requires that alternative compliance for regulated projects "achieve a net environmental benefit." The Contra Costa County RAC System has been designed to provide a net environmental benefit for development projects, as discussed further in Sections 3.3 and 4.3 of this report. Because the Contra Costa County RAC System by design would provide a net environmental benefit for development projects, adoption of an ordinance to implement the RAC System is expected to meet the criteria for a CEQA Categorical Exemption (CE). The following categorical exemptions may apply: Class 7 CE Actions Taken by Regulatory Agencies for Protection of Natural Resources or Class 8 CE Actions Taken by Regulatory Agencies for the Protection of the Environment.

2.3.3 CEQA Considerations for Mitigation

The Contra Costa County RAC System would allow for development of projects that would require mitigation in one jurisdiction, such as a municipality and projects that would generate credits and serve as mitigation in other jurisdictions. Where the Contra Costa County RAC System is applied as mitigation to address project impacts, the mitigation must meet the requirements of CEQA Guidelines 15126.4, which requires mitigation to be enforceable,[11] not deferred,[12] roughly proportional to the impact, and have a clear nexus to the impact. To address these requirements for CEQA mitigation, the Contra Costa System, as defined herein, includes a

[10] Union of Medical Marijuana Patients, Inc. v. City of San Diego, S238563, p. 32

[11] Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design.

[12] The specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project's environmental review, provided that the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard and that will be considered, analyzed, and potentially incorporated in the mitigation measure. Compliance with a regulatory permit or other similar process may be identified as mitigation if compliance would result in implementation of measures that would be reasonably expected, based on substantial evidence in the record, to reduce the significant impact to the specified performance standards.

certification system that would provide substantial evidence that the mitigation is not deferred, is enforceable, and is proportional to the impact being addressed. The Contra Costa County RAC System certification process incorporates these requirements by ensuring that the compliance unit-generating projects exist in order to avoid deferral of mitigation and provide equivalent (proportional) pollution reduction to offset the impact. The Contra Costa County RAC System design also includes adequate enforcement mechanisms to meet the requirements of CEQA and avoid the need for separate pollution reduction mitigation where the Contra Costa County RAC System is used.

2.3.4 CEQA Considerations for Off-Site Mitigation Projects that Generate Compliance Units

Projects that are implemented to generate compliance units (i.e., Off-Site GSI Projects) would be subject to CEQA review because the projects would have a physical environmental effect. The lead agency for review of the Off-Site GSI Projects would be the agency with jurisdiction over the project, based on its location or funding, and is typically the same agency responsible for approving the project. Where multiple agencies would be required to issue approvals for a project, the agency with the greatest responsibility for supervising or approving the project as a whole should be the lead agency (CEQA Guidelines Section 15051[b]). The lead agency is usually the agency with general governmental powers, such as a city or county, rather than a single-purpose agency, such as a water district. The CEQA review for Off-Site GSI Projects would need to be completed prior to Off-Site GSI Project construction and certification.

3. PROPOSED CONTRA COSTA COUNTY RAC SYSTEM OVERVIEW

The **clear organizational framework** for the proposed Contra Costa County RAC System (as identified for proposed program submittal per MRP 3 Fact Sheet) is described in Section 3.1 – 3.3. Section 3.4 describes **program oversight by administrative entities**. Section 3.2.4. describes how the System may provide **compliance with MRP Provision C.3.g.**

3.1 Proposed Contra Costa County RAC System

The proposed Contra Costa County RAC System combines elements from in-lieu payment and (preliminarily) pay-for-performance/Community-Based Public Private Partnership (CBP3) programs. In accordance with MRP Provision C.3.e, participation in the Contra Costa County RAC System would provide Permittees and Regulated Project developers alternative compliance to MRP Provision C.3.b, and benefits relating to Provisions C.11 (Mercury controls), C.12 (PCBs Controls), and, as opportunities arise, C.10 (Trash Load Reduction). The proposed Contra Costa County RAC System is intended to be primarily established under MRP 3 Provision C.3.e, and RAC System documents are submitted to the Water Board as part of a permit amendment process, an option identified in the MRP 3 Fact Sheet, and/or confirmation that the RAC System is consistent with the current MRP 3 Provision C.3.e. If approved by the Water Board through the formal permit amendment process, the Contra Costa County RAC System would be formally recognized under MRP 3 Provision C.3.e.

The proposed RAC System approach was selected through input from the Steering Committee, the TAC, the Advisory Committee, and preliminary legal review, as described in Section 3.2. The proposed Contra Costa County RAC System is illustrated in Figure 2. A Regulated Project typically proceeds with the treat on-site track ("A" in Figure 2) and includes planning review, construction of on-site LID/GSI facilities, certification of on-site facilities, and ongoing O&M by the Regulated Project owner. The Contra Costa County RAC System creates a second optional pathway for C.3 compliance for Regulated Projects ("B" in Figure 2). Instead of constructing LID/GSI facilities on-site, the Regulated Project owner would make a "compliance purchase" and agree to annual ongoing O&M fees levied on the Regulated Project parcel, for a specified number of "compliance units."

The compliance purchase would cover capital costs for "Off-Site GSI Projects" that generate compliance units and are located on public or private land in urban areas within Contra Costa County. The collected funds from compliance purchases (i.e., to fund Off-Site GSI Project capital costs) would be pooled by the Contra Costa County RAC System, and would cover implementation and certification of Off-Site GSI Projects, along with RAC System administrative functions. The annual ongoing O&M fees would cover ongoing O&M and verification of Off-Site GSI Projects.

The Contra Costa County RAC System is expected to achieve TMDL load reduction benefits through the construction of Off-Site GSI Projects, which are anticipated to be primarily located in older urban and industrial areas known to have higher levels of PCBs (SFEI, 2018; CCCWP, 2020).

The proposed Contra Costa County RAC System is expected to provide:

- Flexible compliance for Permittees and Regulated Project owners;
- Cost savings through economies of scale realized through implementation of larger regional Off-Site GSI Projects as well as potential cost savings through using pay-for-performance or CBP3 contracting mechanisms rather than traditional procurement; and
- Additional water quality and environmental benefits and related TMDL compliance benefits through retrofit of untreated older urban and industrial areas with higher pollutant loading and application of equivalent or increased water quality benefit requirements for Regulated Projects.

The Contra Costa County RAC System would be implemented in at least three phases:

1. Phase 1, Initial Pilot Exchanges, occurring concurrently with this Project. This phase entails piloting the RAC System through a small number (1-2) of compliance unit exchanges, and will result in reporting any issues and/or adjustments that are needed to streamline the System.
2. Phase 2 is anticipated to be a five-year initial roll-out of the RAC System. The objective of Phase 2 is the wider acceptance and implementation of the RAC System across Contra Costa County. This phase may include additional studies, agreements, and mechanisms for contracting within the County.
3. Phase 3 and beyond would begin after Phase 2 lessons learned have been addressed through RAC System amendments. In this phase, the RAC System would be established and fully operating, with adaptive management procedures in place.

3.2 Rationale for Selection

3.2.1 Compliance Purchases

The Contra Costa County RAC System is envisioned to meet compliance needs for MRP Permittees and private developers subject to Provision C.3 development and redevelopment requirements. Offset crediting approaches, such as those documented in the Regional Alternative Compliance System Literature Review (City of San Pablo, 2020), were considered early in the Contra Costa County RAC System development. It was determined, however, that although offset crediting would be plausible for addressing GSI requirements and is allowed through MRP Provision C.3.e.i(1), a market-based approach would not be appropriate for addressing mercury and PCBs TMDL due to limited buyer demand for stand-alone load reduction metrics.

The Contra Costa County RAC System will operate with a "compliance purchase" approach. The compliance purchase approach was developed in the model of an in-lieu payment (i.e., fee) approach, currently allowed per MRP Provision C.3.e.i(2), and utilizes language from this option for program definitions[13]. Compliance purchases would be pooled to administer and fund the implementation of Off-Site GSI Projects to provide compliance with the LID/GSI requirements

[13] Though language from C.3.e.i(2) is used, following successful completion of the proposed permit amendment process described, the Contra Costa County RAC System would be formally recognized as a separate option in MRP 3 Provision C.3.e.

of Provision C.3 and provide a "net environmental benefit." In the future, non-GSI projects addressing other benefits could be incorporated into the Contra Costa County RAC System as it continues to evolve and additional buyers are identified (Section 3.3.1).

The recommended compliance purchase approach, modeled from an in-lieu payment approach, was defined consistent with input from the Project technical advisors, Steering Committee, TAC, and the Advisory Committee, who voiced the need for the Contra Costa County RAC System to be simple and to provide a means for flexible compliance, increased multiple benefits, and cost efficiencies. The compliance purchase approach, and the resulting Off-Site GSI Projects, managed through the Contra Costa County RAC System, allows for a simplified process for certification, verification, and tracking. A pay-for-performance or CBP3 contracting approach could be utilized to incentivize cost-effective project implementation.

Per MRP Provision C.3.e, Off-Site (GSI) Projects may be completed within three years after the end of construction of the Regulated Project. The RAC System may allow for sale of Equivalent Acres Greened units up to three years in advance of completion of the Off-Site GSI Project if there is a high level of certainty that project will be installed and would address the water quality impact caused by the Regulated Project. For advance sale of compliance units, tracking will be implemented as part of the program to ensure that the compliance units meet all legal and CEQA requirements for mitigation.

3.2.2 Integration into Existing Compliance Programs

The launch and ongoing administration of water quality programs may require substantial resources for program costs and infrastructure. Technical advisors cautioned the Project Team early in the Contra Costa County RAC System development that these program costs have undermined the cost-saving objectives of several early water quality programs and that reducing program costs would be essential for the RAC System's success. In response, the Contra Costa County RAC System has been developed in a manner that minimizes these program costs through integration with existing Permittee MRP C.3 LID/GSI compliance programs and existing administrative infrastructure and resources. This is expected to not only reduce program costs for the Contra Costa County RAC System, but would also reduce barriers to entry for Permittees familiar with the existing compliance programs and resources. The Contra Costa County RAC System is proposed to utilize existing staff and tools by aligning resource-intensive System processes, such as certification, verification, and tracking, with requirements in the existing MRP. See Sections 3.3.2.1, 5.6, and 5.7 for an overview of these processes.

3.2.3 Considerations for System Metric

For the purposes of this report, the Contra Costa County RAC System metric is referred to as a "compliance unit." This is a unit of exchange that can be purchased by buyers seeking alternative compliance with the MRP (or, potentially, other NPDES permits). With the use of the compliance purchase approach modeled on the MRP Provision C.3.e in-lieu fee option, the Contra Costa County RAC System compliance unit can be defined using language in MRP Provision C.3.e.i and the MRP 3 Fact Sheet (Section 2.1) as requiring three elements:

1. Hydraulically-sized treatment in accordance with Provision C.3.d with LID/GSI treatment measures of an **equivalent quantity of both stormwater runoff and pollutant loading**, which is referred to as **"Equivalent Acres Greened;"**
2. A net environmental benefit; and
3. A proportional share of the O&M costs of the Off-Site GSI Project, which is referred to as an **"Ongoing O&M fee."**

In order to demonstrate equivalent or better treatment of runoff and pollutant loading, analyses were conducted to define ratios and RAC System rules that must be applied when "Equivalent Acres Greened" compliance units are purchased via a compliance purchase. The Contra Costa County RAC System ratios and rules are expected to result in implementation of GSI primarily in older urban and industrial areas that, for the most part, currently discharge untreated stormwater to receiving waters, and additionally to result in a net increase in impervious surface treated. Implementation of GSI in higher polluting areas has been demonstrated to result in overall improvements to water quality.

In addition to the Contra Costa County RAC System compliance unit stormwater runoff and pollutant loading equivalency demonstration, the Off-Site GSI Projects generating compliance units must be maintained on a regular basis. The Contra Costa County RAC System compliance unit is further described in Section 4 of this document.

3.2.4 Hydromodification Management

At this time, it is not expected that Regulated Projects subject to hydromodification management requirements (Provision C.3.g) would participate in the first phase of the Contra Costa County RAC System. See Figure 1 for a map of areas in the County where hydromodification management requirements apply for Regulated Projects that meet the acreage threshold (i.e., one acre impervious surface added or replaced). Provision C.3.g.ii (HM Standard) specifically requires:

> *"Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the **receiving stream** over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post- project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force."*

Hydromodification management requirements focus specifically on limiting the impacts to the receiving stream of the Regulated Project. Therefore, any Off-Site GSI Project or other off-site project implemented to address hydromodification would need to be built within a constrained geographic area, such that it addresses impacts to the same receiving stream.

While there could be some unique situations where implementation of off-site hydromodification management measures could serve multiple Regulated Projects in an innovative fashion (e.g., where an in-stream measure could be used for a currently impacted and unstable channel, in partnership with a local non-profit), these situations are highly site specific. If these projects are

constructed as part of the Contra Costa County RAC System, there may be a need for a project-specific compliance purchase amount (i.e., capital cost) and ongoing O&M fee. Additionally, if water quality is not incorporated into the hydromodification management focused off-site project, a Regulated Project purchasing hydromodification management units would need to make a separate compliance purchase and pay an ongoing O&M fee for water quality compliance. The potential future hydromodification "track" is included in the Contra Costa County RAC System schematic diagram in Figure 3 to demonstrate how this track would integrate with the rest of the RAC System.

Alternatively, Regulated Projects subject to hydromodification management requirements that are meeting Provision C.3.g could participate in the Contra Costa County RAC System solely for water quality compliance needs. For example, the Regulated Project would install hydromodification management control measures on-site (i.e., that do not also comply with the GSI/LID and sizing requirements of MRP Provisions C.3.c and C.3.d) and purchase RAC System compliance units for water quality.

3.3 Contra Costa County RAC System Components

The main components of the Contra Costa County RAC System are described in this section. The hydromodification track, introduced in Figure 3 as a potential future addition to the Contra Costa County RAC System, is not included in this section and would be developed in System Phase 3 or later.

3.3.1 RAC System "Buyers"

Contra Costa County RAC System "buyers" are primarily expected to include Regulated Project owners/developers located within Contra Costa County seeking compliance with MRP Provisions C.3.c-d, f, and h (LID/GSI). Contra Costa County RAC System buyers could also include Permittees seeking Equivalent Acres Greened compliance units for Regulated Projects or to meet GSI retrofit acres required by MRP 3, or other non-Regulated project buyers located within Contra Costa County.

While Off-Site GSI Projects are expected to be located such that they provide enhanced TMDL load reduction benefits (as compared to on-site stormwater treatment), because there are other control measures for TMDL load reductions that may cost less, there is not expected to be substantial demand for Equivalent Acres Greened compliance units purchased solely for TMDL compliance purposes. Consequently, other entities subject to the TMDLs, such as publicly operated treatment works (POTWs) or industrial facilities, are also not expected to be interested in purchasing the Equivalent Acres Greened compliance units solely to meet their TMDL compliance requirements.

The amount of future development that would ultimately participate in the Contra Costa County RAC System is difficult to predict, not least because the level of participation is dependent on the implementation and roll-out of the RAC System. Because uncertain demand can impede a program's launch and success, one approach to provide Equivalent Acres Greened compliance unit demand in the early implementation phase is to launch the Contra Costa County RAC System with a Programmatic Demand (i.e., a minimum amount of compliance units guaranteed to be purchased, and recommended to be purchased by Permittees during the RAC System Phase

2). Additional information regarding this potential approach, along with development projection information, is provided in Section 6.2. There is potential for the Contra Costa County RAC System to be expanded to other interested buyers in the future (Figure 4). See Section 5.2 for additional details regarding other potential future buyers.

3.3.2 Off-Site GSI Projects

Off-Site GSI Projects would be constructed and certified within Contra Costa County to generate Equivalent Acres Greened compliance units for sale to the RAC System buyers. See Section 4.2.1 for details regarding allowable control measures for Off-Site GSI Projects. Off-Site GSI Projects are expected to be implemented through public and/or private "compliance unit providers" or "sellers." The RAC System would include a pre-screening application process to allow for preliminary approval of compliance units generated, which compliance unit providers may complete for this assurance prior to conducting design, construction, and certification of Off-Site GSI Projects. Unit providers who do not complete the pre-screening application process would still be eligible to request certification of compliance units generated from Off-Site GSI Projects they have constructed, though they run the risk that the constructed project has not addressed an issue required for certification that could have been identified through pre-screening.

Following preliminary review (if the pre-screening application process is conducted), and approval from the private property owner (if located on private land), Off-Site GSI Projects would undergo typical construction approval processes by the jurisdiction in which the proposed facility is to be located, including required CEQA review and plan review, and begin construction. The jurisdiction in which the Off-Site GSI Project is located would certify the project following installation, and the compliance units generated would be available for exchange through the RAC System. See additional details for certification in Section 5.2.

In some cases, compliance units may be exchanged prior to full construction of the Off-Site GSI Project. The RAC System Administrator would likely only allow this when there is high certainty that the Off-Site GSI Project would be implemented, for example, the Project has been fully designed, approved, has completed the pre-screening process, and is funded or has a clear plan for funding. In these instances, compliance units would be exchanged up to three years in advance and would be fully certified after the Off-Site GSI Project has been constructed.

3.3.2.1 Off-Site GSI Project Certification, Verification, and Tracking

The jurisdiction in which the Off-Site GSI Project is located would certify the Off-Site GSI Project and quantification of benefits[14] to make the compliance units available within the Contra Costa County RAC System for exchange. In some cases, compliance units could be available for exchange in advance of Off-Site GSI Project implementation, after review and approval of the design and quantification of benefits. If compliance units are available in advance of Off-Site GSI Project certification, the same jurisdiction would be responsible for certifying implementation upon project completion. The Off-Site GSI Project certification process is

[14] It is expected that preliminary quantification of benefits (including Equivalent Acres Greened compliance metrics generated) would occur as part of preliminary review processes and would be confirmed through certification.

proposed to follow current County processes, which are consistent with MRP requirements, and is described in further detail in Section 5.4 and Attachment B.

The jurisdiction in which the Off-Site GSI Project is located would conduct ongoing O&M verification of the Off-Site GSI Project's performance, including required site inspections. The Off-Site GSI Project verification process has also been developed to be consistent with current County processes, which are compliant with MRP requirements, and is described in Section 5.5.

Tracking of Off-Site GSI Projects is expected to primarily be conducted by the jurisdiction in which the Off-Site GSI Project is located. Information tracked would include certification, total Equivalent Acres Greened compliance units generated, compliance units exchanged, and ongoing verification of Off-Site GSI Projects and their associated compliance units. The Contra Costa County RAC System Tracking Tool is described in Section 9 and Appendix A. The RAC System Tracking Tool would also be used to track documentation from the certification and verification processes, as well as provide transparency and accountability to the public. Regulated Project participants would also be tracked in the County's current ArcGIS Online (AGOL) tracking tool, as described in Sections 5.5 and 5.6.

3.3.2.2 Ongoing Off-Site GSI Project Operation and Maintenance

Ongoing O&M of constructed Off-Site GSI Projects is expected to be managed and performed either by the jurisdiction in which the Off-Site GSI Project is located and/or by a contracted compliance unit provider as part of a pay-for-performance or CBP3 contracting process (Section 6.3.3). In either case, funds for ongoing O&M are proposed to be collected through an ongoing O&M fee (Sections 4.6 and 6.7).

3.3.3 Net Environmental Benefit

MRP Provision C.3.e requires a Net Environmental Benefit to be provided when Regulated Projects use the alternative compliance approach. Net Environmental Benefit has been incorporated into the compliance metrics, as described in Section 4. To ensure a Net Environmental Benefit, an "NEB Ratio" is applied to the in-lieu fee (see Sections 3.3.4 and 4.3). Collected funds associated with the NEB Ratio would, for the initial roll-out of the program (i.e., Phase 2), be directed towards generating additional Equivalent Acres Greened compliance units through Off-Site GSI Projects. The additional Equivalent Acres Greened compliance units associated with the NEB Ratio for each exchange would provide a net increase in impervious surface treated and a net reduction in pollutant load.

Following Phase 2 of the Contra Costa County System, the NEB Ratio may also be directed towards an expanded list of projects and programs beyond additional Equivalent Acres Greened compliance metrics generated through Off-Site GSI Projects to address future water quality objectives.

3.3.4 Compliance Purchases

3.3.4.1 One-Time Compliance Purchase

The one-time compliance purchase (in contrast to the ongoing O&M fee) is calculated based on the amount of Equivalent Acres Greened compliance units that are exchanged, plus an Administrative Payment. The amount of Equivalent Acres Greened compliance units needed for each exchange is calculated based on the Regulated Project area and land use type, as described

in Section 4. This amount of Equivalent Acres Greened compliance units is then multiplied by the NEB Ratio, to demonstrate "net environmental benefit," before being multiplied by the Equivalent Acre Greened unit cost ($Cost_{EAG}$). The resulting compliance purchase is calculated as:

$$Purchase_{Compliance} = (Equivalent\ Acres\ Greened \times NEB\ Ratio) \times Cost_{EAG} + Payment_{Administrative}$$

The Equivalent Acre Greened unit cost is envisioned to be developed through a cost study led and/or commissioned by the CCCWP RAC Subcommittee, and would be consistent for all participants in the Contra Costa County RAC System. While participation in the Contra Costa County RAC System and payment for a corresponding compliance purchase is optional, and therefore not subject to the requirements of Assembly Bill (AB) 1600, the cost study would be developed using similar methods to those required by AB 1600 to allow for transparency in how the Equivalent Acre Greened unit cost is developed.

The administrative payment would include monetary charges for CCCWP System Administrator, along with charges by the jurisdiction in which the Regulated Project is located. Administrative payment amounts would be developed through studies when fee schedules are updated by Permittees and will cover all staff and/or consultant hours, along with materials and overhead, to perform administrative functions needed for the Contra Costa County RAC System. This process is anticipated to be informed by Phase 1 and is further described in Section 6.4.2.

Compliance purchases would be collected by the jurisdiction in which Regulated Project participant(s) are located. After deducting the administrative payment for the jurisdiction in which the Regulated Project is located, the remaining compliance purchase payment would be transferred to and pooled by the CCCWP System Administrators. See Sections 3.4 and 6.5 for further detail on fund administration and management.

3.3.5 Ongoing O&M Fee

Participating buyers would pay an annual ongoing O&M fee to pay for long-term maintenance of the Off-site GSI Projects that generate compliance units. Based on an analysis of possible mechanisms for the ongoing O&M fee, it is preliminarily proposed that these fees would be levied through a Community Facilities District. The ongoing O&M fee would be set to include the costs of LID/GSI facility O&M and associated administrative costs. The Community Facilities District would disburse pooled O&M funds to entities when proof of completed O&M is received. O&M activities and payments would be documented through the RAC System Tracking Tool. See Section 4.6 for further detail regarding the ongoing O&M fee and potential Community Facilities District structure.

3.4 Summary of Preliminary Administrative Structure

As the Contra Costa County RAC System encompasses many participants and cities across the County, the administration of the RAC System would involve many public entities and additional coordination with private participants. The Contra Costa County RAC System is envisioned to be primarily administered by the CCCWP, with additional aspects managed by County Permittees and the Flood Control District. All entities involved are expected to engage in agreements relating to their participation in the RAC System. Additionally, Permittees

implementing the Contra Costa County RAC System within their jurisdiction would be expected to update their stormwater ordinances to include the RAC System (Model Stormwater Ordinance language for the Contra Costa County RAC System is provided in Appendix C-1) and complete a Participant Memorandum of Understanding (MOU, see Appendix C-2).

The CCCWP administrators are expected to include at least two specific entities:

1. The RAC Subcommittee, which is expected to be made up of volunteer Permittee stormwater program representatives that would make decisions regarding the Contra Costa County RAC System.
2. The RAC System Administrator, who would perform management, financial administration of the Contra Costa County RAC System, RAC System Tracking Tool management, and complete reporting.

Other Contra Costa County RAC System administrators include:

1. County Permittees, which would manage Regulated Project applicants and compliance unit providers that construct Off-Site GSI Projects within their jurisdictional boundaries, facilitate exchanges, and facilitate and/or perform Off-Site GSI Project implementation, certification, O&M, and verification, and
2. The Flood Control District, which is anticipated to act as the fiduciary agent for the ongoing O&M fee.

Table 2: Summary of System Administrative Entities, Roles, and Responsibilities

System Entity	System Role	System Responsibility

Clean Water Program	RAC Subcommittee	• Create and update Off-Site GSI Project prioritization criteria for RAC System.
		• Review and approve Off-Site GSI Project applications from compliance unit providers.
		• Review and approve contractors hired to implement Off-Site GSI Projects and/or serve as a pay-for-performance or CBP3 contractor.
		• Determine administrating agency for contractors.
		• Solicit and/or review applicable cost studies for the RAC System.
		• RAC System adaptive management including (see Section 8):
		  ○ Participating in RAC System Strategy Meetings,
		  ○ Making recommendations on RAC System priorities and technical needs,
		  ○ Reviewing and recommending regular cost updates, and
		  ○ Developing an as-needed list of RAC System amendments on a regular basis.

System Entity	System Role	System Responsibility

Clean Water Program	System Administrator	• Pool compliance purchase payments and disburse to compliance unit provider(s) for Off-Site GSI Project implementation.
		• Manage and complete reporting for the RAC System.
		• Manage RAC System Tracking Tool (e.g., managing Tracking Tool operator, quality assurance/quality control).
		• Enter data into RAC System Tracking Tool for non-Regulated project buyers and exchanges.
		• Perform functions to be determined for the RAC System Community Facilities District (potentially including O&M fee pooling, disbursement, cost adjustments, and/or reporting).
		• Perform required annual reporting in compliance with the MRP.
		• Conduct recommended adaptive management including:
		  ○ Amend RAC System in response to future permit reissuances, and/or
		  ○ Enact other identified RAC System revisions recommended by RAC Subcommittee.

Flood Control District	Community Facilities District Fiduciary Agent and/or Administrator TBD	• Levy and collect the ongoing O&M fee. • Perform other functions to be determined for the RAC System Community Facilities District (potentially including O&M fee pooling, disbursement, cost adjustments, and/or reporting).

Permittees	Exchange Facilitator; Certifying Entity; Verifying Entity	• For Regulated Projects:
		  ○ Application review and approval of Regulated Project owners interested in participating in the Contra Costa County RAC System.
		  ○ Calculation and/or confirmation of compliance purchase amounts.
		  ○ Collection of compliance purchase payments and transfer of compliance purchase payments (deducting jurisdiction-specific administrative payments) to the CCCWP RAC System Administrator.
		  ○ Enter Regulated Project participant data into RAC System Tracking Tool.
		• For Off-Site GSI Projects:
		  ○ Approve applications.
		  ○ Perform plan checks.
		  ○ Conduct certification and verification processes.
		  ○ Perform ongoing O&M.
		  ○ Enter Off-Site GSI Projects in RAC System Tracking Tool.
		• Notify participants and public of amendments to the RAC System Framework or preapproved list of control measures.

These administrative roles are also shown visually in Figure 5. Additional information about certification and verification processes are provided in Sections 5.4 and 5.5.

3.5 RAC System Next Steps

Next steps for the Contra Costa County RAC System will include successful completion of initial pilot exchanges, and lessons learned applied to the launch of RAC System Phase 1. Prior to launching Phase 2, the RAC System will be submitted to the Water Board as part of a formal amendment process. The intent of this process would be to formally adopt the RAC System as an alternative compliance option under MRP 3. During RAC System Phase 2, which is intended to be a fully operating program, adaptive management practices will be conducted on an ongoing basis as described in Section 8. Additional details regarding the submittal for permit amendment or approval under the current MRP 3 Provision C.3.e language, along with other next steps for Contra Costa County RAC System Phase 2, are provided in Section 11.

4. CONTRA COSTA COUNTY RAC SYSTEM COMPLIANCE UNIT DEFINITION AND CONTROL MEASURES

The **demonstration of the treatment of an equivalent quantity of both stormwater runoff and pollutant loading and achievement of net environmental benefit** for the proposed Contra Costa County RAC System (as required for proposed program submittal per MRP 3 Fact Sheet), provided by clear definitions of the Contra Costa County RAC System metric (i.e., compliance unit) and allowable control measures, is described in this section. Additionally, descriptions of how the compliance unit is defined to provide **compliance with MRP Provisions C.3.c-d** are also included in this section.

4.1 Compliance Unit Definition

Using MRP Provision C.3.e language, the Contra Costa County RAC System compliance unit includes three parts:

1. Equivalent Acres Greened;
2. A Net Environmental Benefit; and
3. An ongoing O&M fee.

This section describes how the three parts of the compliance unit are defined for the Contra Costa County RAC System.

4.2 Equivalent Acres Greened

Equivalent Acres Greened is the portion of the Contra Costa County RAC System compliance unit that would be generated through Off-Site GSI Projects. For Regulated Projects, Equivalent Acres Greened compliance units purchased must meet the Provision C.3.e requirement of "hydraulically sized treatment in accordance with Provision C.3.d with LID/GSI treatment measures of an equivalent quantity of both stormwater runoff and pollutant loading." The Provision C.3.d sizing and LID/GSI treatment measure requirements would also apply to compliance units purchased by non-Regulated projects through the Contra Costa System. See Section 4.2.1 for the facility-specific RAC System compliance unit requirements.

Regulated Project owners participating in the Contra Costa County RAC System must purchase compliance units that meet the Provision C.3.e requirement of providing "equivalent quantity of both stormwater runoff and pollutant loading" to an on-site facility (Section 4.2.3). However, non-Regulated project buyers that choose to participate in the Contra Costa County RAC System do not need to purchase compliance units that meet equivalent volume and equivalent pollutant loading requirements and would instead purchase compliance units on the basis of runoff-generating area (Section 4.2.2).

Compliance units are defined on an area basis to allow for easier calculation of compliance units (i.e., so that volume modeling is not required for each buyer) and to provide more equity between different buyers relating to the quantity of compliance units they need to purchase. Volume differences across the County are addressed at a coarser level using a Rainfall Ratio (see Section 4.2.3). The RAC System compliance unit calculation is intended provide

conservatism in the amount of total runoff volume that is exchanged (consistent with MRP C.3.e equivalence requirements). As the RAC System is launched and implemented, periodic "volume audits" will be conducted using more detailed hydrologic modeling to ensure that the ratios are working as intended and sufficient volume is exchanged through the RAC System.

The Equivalent Acres Greened calculation for all buyers, along with a summary of the Equivalent Acres Greened calculation, is described in Section 4.2.4.

4.2.1 Treatment ("Greened") Requirements and Allowable Control Measures

4.2.1.1 Off-Site GSI Project Sizing Requirements

Equivalent Acres Greened are generated through treatment by Off-Site GSI Projects sized to capture the MRP-defined volume hydraulic design basis or the MRP-defined flow hydraulic design basis. MRP Provision C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems includes:

> *(1) Volume Hydraulic Design Basis – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:*
>
> > *(a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or*
> >
> > *(b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.*
>
> *(2) Flow Hydraulic Design Basis – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:*
>
> > *(a) 10 percent of the 50-year peak flow rate;*
> >
> > *(b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or*
> >
> > *(c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.*
>
> *(3) Combination Flow and Volume Design Basis – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.*

In order for the generated Equivalent Acres Greened to be to be available for exchange, the review and approval process must include verification that the Off-Site GSI Projects are sized in accordance with the C.3.d requirements. This must be confirmed through certification processes.

4.2.1.2 Allowable Control Measures for Off-Site GSI Projects

Properly-sized control measure types allowable for Off-Site GSI Projects generating Equivalent Acres Greened are those included in the Contra Costa County Stormwater C.3 Guidebook 7th Edition (CCCWP, 2017) and considered low impact development or LID per the MRP.

Allowable treatment facilities include:

- ***Bioretention facilities***—Bioretention captures runoff in a shallow vegetated reservoir on a mulched biotreatment soil media surface, then filters the runoff through plant roots and biologically active soil mix (which removes pollutants), into a gravel layer. From the gravel layer, runoff ultimately infiltrates to the subsurface or is conveyed through an underdrain to the storm drain system.
- ***Flow-through planters***—Flow through planters include vegetation and soil media similar to bioretention but are contained within a concrete box and are designed to discharge all treated runoff.
- ***Dry wells and infiltration basins***—Infiltration-based facilities take advantage of rapidly-draining soils to capture and infiltrate large amounts of stormwater runoff to the subsurface. Infiltration facilities are only feasible where soils with sufficiently high infiltration rates are present and where there are no subsurface hazards that could be impacted by infiltration (i.e., adequate depth to groundwater, and no geotechnical hazards or subsurface contamination).

Other allowable facility types not specifically included in the C.3 Guidebook include properly sized tree well facilities and suspended pavement systems, which filter runoff vertically at a 5 inch-per-hour loading rate, contain vegetation, and perform similarly to bioretention, as well as stormwater capture and use. In addition to the control measures listed, the C.3 Guidebook also includes a "Cistern + Bioretention Facility" and "Bioretention + Vault Facility;" these facility combinations are intended to manage both hydromodification and water quality (CCCWP, 2017). While allowable, it is expected that these types of facilities would not be used in Phase 2 of the Contra Costa County RAC System because of the additional cost required for sizing to hydromodification standards. Self-treating and self-retaining control measures may be eligible to generate Equivalent Acres Greened compliance units with justification from compliance unit providers.

Control measures other than those listed could be used to generate Equivalent Acres Greened compliance units if compliance unit generators can demonstrate that the facilities are designed consistent with the C.3 Guidebook requirements (CCCWP, 2017) and provide equivalent volume capture and pollutant load reduction performance as the listed control measures. It is expected that Phase 2 of the Contra Costa County RAC System would limit allowable control measures to LID/GSI facilities only. Non-LID/GSI facility types could be considered in the future through Contra Costa County RAC System adaptive management protocol to address future water quality objectives (Section 8).

4.2.2 Runoff Generating Acres

Runoff Generating Acres form the base unit of the Equivalent Acres Greened calculation. For the RAC System, "Runoff Generating Acres" are calculated based on the impervious and pervious surfaces that generate runoff, and may be different than the effective impervious area. In some cases, runoff coefficients may be different for different impervious surfaces throughout the County. Runoff Generating Acres include 100% of directly-connected impervious surfaces and 10% of pervious surfaces within a given drainage area. The assumption that impervious acres and 10% of pervious surfaces generate runoff is consistent with the "Treatment Only" (i.e., GSI) runoff factors for pervious surfaces in the Contra Costa C.3 Technical Manual Table 3-2 (CCCWP, 2017). The runoff coefficient of 10% of pervious surfaces is also validated through the hydrology model developed for the County's RAA for mercury and PCBs, developed in compliance with MRP Provisions C.11 and C.12 (CCCWP, 2020). Details regarding the RAA validation of the 10% runoff coefficient for pervious surfaces are provided in Appendix B.

For Regulated Projects (i.e., to calculate Equivalent Acres Greened required to be purchased), this calculation would be conducted for the untreated proposed development footprint. For Off-Site GSI Projects (i.e., to calculate the amount of Equivalent Acres Greened generated), this calculation would be performed for the portion(s) of the delineated Drainage Area(s) tributary to the Off-Site GSI Project that is not treated by upstream facilities. The total Runoff Generating Acres are calculated as:

$$Runoff\ Generating\ Acres = Acres_{Impervious} + (0.1 \times Acres_{Pervious}) \quad \text{Eq. 4-1}$$

For Off-Site GSI Projects, Equivalent Acres Greened compliance units generated are calculated as included in Equation 4-2, providing that the Off-Site GSI Project is sized per MRP Provision C.3.e.

$$Equivalent\ Acres\ Greened_{Generated} = Runoff\ Generating\ Acres_{Off-Site\ GSI\ Facility} \quad \text{Eq. 4-2}$$

Each Equivalent Acre Greened compliance unit (or portion of a unit) generated by an Off-Site GSI Project would have a rainfall zone, land use, and imperviousness associated with it (i.e., as compliance unit attributes) based on the geospatial location of the Drainage Area generating the compliance units. An Off-Site GSI Project may have multiple different Drainage Areas that are tributary to different control measures or facilities that make up the overall Off-Site GSI Project. In the current Contra Costa County C.3 Manual, these different areas are called "drainage management areas" or DMAs (CCCWP, 2017). As a result, different compliance units generated by an Off-Site GSI Project may have different attributes associated with them. These attributes would be associated with each generated Equivalent Acre Greened compliance unit and tracked in the RAC System Tracking Tool.

For Regulated Projects, the Equivalent Acres Greened compliance units required to be purchased is calculated based on the Regulated Project's Runoff Generating Acres along with a Rainfall Ratio and Pollutant Ratio, described in Section 4.2.3. For non-Regulated Project buyers, Equivalent Acres Greened compliance units do not require a Rainfall Ratio and Pollutant Ratio and may be purchased based on the desired number of Runoff Generating Acres or impervious acres desired for purchase.

4.2.3 Equivalent Volume and Pollutant Loading

The Equivalent Acres Greened compliance units purchased by Regulated Projects must meet the equivalent volume and pollutant loading requirements when comparing the Regulated Project drainage area to the (previously untreated) drainage area(s) of the compliance unit-generating Off-Site GSI Project(s). These elements are defined as follows:

1. Equivalent Volume – Achieved when equivalent **Runoff Generating Acres** are exchanged and there is **equivalent or higher rainfall** associated with the Equivalent Acres Greened compliance units as compared to rainfall at the Regulated Project. If equivalent or higher rainfall is not associated with the Equivalent Acres Greened compliance units as compared to the Regulated Project purchasing those compliance units, a Rainfall Ratio is applied to demonstrate equivalent volume (Section 4.2.3.1).
2. Equivalent Pollutant Loading – Achieved when **equivalent volume** is demonstrated and there are **equivalent or higher pollutant concentrations** (based on land use) associated with the Equivalent Acres Greened, as compared to land uses within the Regulated Project drainage area. If equivalent or higher pollutant loading is not associated with the Equivalent Acres Greened compliance units as compared to the Regulated Project, a Pollutant Ratio is applied to demonstrate equivalent pollutant loading (Section 4.2.3.2).

Equivalent volume and equivalent pollutant loading are summarized in Figure 6. The calculations to determine equivalent volume and equivalent pollutant loading are described in further detail in the following sections.

4.2.3.1 Equivalent Rainfall

Rainfall varies widely throughout the County. Providing that equivalent Runoff Generating Acres are purchased by the Regulated Project, there must be equivalent rainfall associated with the compliance units purchased to meet the equivalent volume demonstration. Using PRISM 30-year annual normal precipitation values, average annual rainfall zones have been identified across the County (Figure 7) (PRISM Climate Group, 2023).

If the rainfall zone associated with the Equivalent Acre Greened compliance units generated within a Drainage Area tributary to an Off-Site GSI Project is different than the rainfall zone associated with the Regulated Project purchasing the compliance units, a rainfall ratio (i.e., exchange ratio[15] that includes rainfall considerations) must be applied to the Runoff Generating Acres of the Regulated Project as part of the compliance unit calculation to achieve the equivalent volume demonstration for the exchange.

The Rainfall Ratio is calculated based on the proportional difference in rainfall between the Regulated Project and the location of the Off-Site GSI Project generating the Equivalent Acre(s) Greened, rounded to the nearest 10%. The Rainfall Ratio is used to demonstrate equivalent

[15] Exchange ratios are numeric values that adjust generated compliance units from an Off-Site GSI Project to account for environmental and programmatic needs to reduce compliance liability for participants in the RAC System. These are adapted from market-based programs where ratios are used to address calculation uncertainty, exchange equivalence, and net water quality benefit.

volume is captured at the Off-Site GSI Project as would have been captured by an on-site GSI facility at the Regulated Project. The minimum Rainfall Ratio allowable by the Contra Costa County RAC System is 1.0.[16] The Rainfall Ratio is calculated as:

$$Rainfall\ Ratio\ =\ Rainfall_{Regulated\ Project}/Rainfall_{Equivalent\ Acre\ Greened\ Unit} \quad \text{Eq. 4-3}$$

A matrix of Rainfall Ratios for all combinations of compliance unit exchanges in Contra Costa County is provided in Table 3.

Once identified, the Rainfall Ratio is applied to Regulated Project Runoff Generating Acres to calculate Equivalent Volume Acres required for purchase, as follows:

$$Equivalent\ Volume\ Acres\ =\ Runoff\ Generating\ Acres_{Regulated\ Project} \times Rainfall\ Ratio \quad \text{Eq. 4-4}$$

[16] The 1.0 minimum Rainfall Ratio allows more Equivalent Acres Greened compliance units to be available for purchase at the minimum cost and limits the potential for bias towards purchasing Equivalent Acres Greened compliance units generated in higher rainfall zones.

Table 3: Rainfall Ratio Matrix for Rainfall Zones Across the County

Exchange Ratio Matrix		Equivalent Acres Greened Annual Average Rainfall Zone[1] (inches)																				
		≤13	≤14	≤15	≤16	≤17	≤18	≤19	≤20	≤21	≤22	≤23	≤24	≤25	≤26	≤27	≤28	≤29	≤30	≤31	≤32	≤33
Regulated Project Annual Average Rainfall Zone (inches)	≤13	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤14	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤15	1.2	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤16	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤17	1.3	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤18	1.4	1.3	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤19	1.5	1.4	1.3	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤20	1.5	1.4	1.3	1.3	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤21	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤22	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤23	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤24	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤25	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤26	2.0	1.9	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤27	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤28	2.2	2.0	1.9	1.8	1.6	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤29	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤30	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
	≤31	2.4	2.2	2.1	1.9	1.8	1.7	1.6	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	*1.0*	*1.0*	*1.0*	*1.0*
	≤32	2.5	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	*1.0*	*1.0*	*1.0*
	≤33	2.5	2.4	2.2	2.1	1.9	1.8	1.7	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	*1.0*	*1.0*

[1] Determined based on location of compliance unit-generating Off-site GSI Project drainage area.

4.2.3.2 Equivalent Pollutant Loading

In addition to the equivalent volume requirement for Regulated Project participants, as covered in Section 4.2.3.1, the Off-Site GSI Project (i.e., which is generating Equivalent Acres Greened compliance units) must also provide capture and treatment of equivalent pollutant load for compliance with MRP C.3.e. Pollutant load reduction achieved through a GSI facility can be calculated as the difference between the influent load and the effluent load.

It is anticipated that the control measures implemented as Off-Site GSI Projects would primarily include bioretention facilities, other facilities that use filtration media such as planter boxes, and, where feasible, infiltration-based facilities. Facilities that are designed to infiltrate the MRP Provision C.3.d required volume remove stormwater runoff and any entrained pollutants and therefore consistently do not produce treated effluent for the design runoff volume.

Filtration-based facilities have been demonstrated to exhibit a relatively consistent effluent concentration with little to no dependence on influent concentration, especially for sediment-bound pollutants. For example, media filters tend to produce relatively consistent effluent concentrations that are independent of influent concentration because sediment is typically removed within the first few inches of media (Barrett, 2005). These effluent outcomes have also been observed from analyzing International Stormwater Best Management Practice (BMP) Database data; as a result, Leisenring et al. (2013) recommended using a constant effluent concentration when modeling the removal of total suspended solids (TSS) and particulate-bound pollutants for sand filters and bioretention cells.

Given that the anticipated control measures are likely to achieve similar effluent concentrations for a wide range of influent concentrations typical of urban runoff, similar influent load must be treated by the Off-Site GSI Project to achieve equivalent or increased reduction in pollutant load as compared to what would have been achieved by an on-site GSI facility located at the Regulated Project. For the Contra Costa County RAC System, equivalent influent pollutant loading between the Regulated Project and the Drainage Area(s) of the Off-Site GSI Project generating the compliance units exchanged is demonstrated based on PCBs and TSS land use-based loading.[17] Mercury is not included as one of the pollutants to demonstrate equivalency as one of the main sources of mercury is atmospheric deposition and is therefore more distributed across different land use types. This was demonstrated in SFEI's calibration of the Regional Watershed Spreadsheet Model (RWSM), where a relatively even distribution of mercury concentrations over different land uses was found, consistent with the "conceptual understanding of the diffuse nature of [mercury] sources in the landscape and the influence of atmospheric deposition" (Wu et al., 2016). Additionally, mercury, which is typically sediment-bound, is assumed to be reduced when TSS has been reduced in stormwater control measures.

If the PCBs loading and the TSS loading associated with the compliance units to be purchased are greater than or equal to that of the Regulated Project, equivalent pollutant loading is demonstrated. The PCBs loading and TSS loading associated with the compliance units purchased is proposed to be estimated on the basis of the land uses within the unit generating

[17] TSS is used to represent pollutant loading strength of typical urban pollutants of concern, many of which are sediment-bound.

Off-Site GSI Project drainage area(s). The Regulated Project loading would be based on the land uses within the development boundary.

PCBs Loading

PCBs land use-based loading is obtained from the RWSM Toolbox v1.0 Pollutant Model, "Pollutant Spreadsheet Model Calculations – Region" results (from SFEI, 2018 as summarized in Geosyntec, 2019). The division between "old" and "new" land uses is approximately 1968 (i.e., Old Industrial land use areas that have been industrial since at least 1968). This cutoff was selected to represent areas that may have been exposed to PCBs prior to regulatory changes to phase out the use of PCBs in the United States.

Table 4: PCBs Land Use-Based Concentrations

Land Use Category	Total PCBs (ng/L)
Old Industrial and Source Areas	204
Old Commercial and Old Transportation	40
Old Residential	4
New Urban	0.2

Note: ng/L - nanograms per liter

TSS Loading

TSS land use-based Event Mean Concentrations (EMC) were developed using data from the National Stormwater Quality Database (Pitt, 2015). The database was queried to obtain all TSS stormwater runoff samples collected within EPA Rain Zone 6 in California, in Spring, Fall, or Winter seasons. This query returned 650 stormwater runoff sample results from 647 rain events at 40 sites for "Residential," "Commercial," "Institutional," "Freeway," "Industrial," and "Open Space" land uses.

The data for each land use category were analyzed for outliers prior to developing EMCs. Following removal of outliers, the data were examined for normality. Open Space land use data was concluded to not come from a normally distributed population. Given this finding, and that Open Space land use is not expected to make up a large part of GSI drainage areas, Open Space data were not examined further for EMC development.

Land uses were compared to each other to understand if significant differences in the distribution of TSS concentrations exist. The distributions for each land use are shown in Appendix B. Initial box plot results demonstrate that confidence intervals of the median TSS concentration for Industrial land use do not overlap with those of residential, commercial, and institutional, which are more similar to each other throughout their distributions, and Freeway TSS concentrations are almost always higher than residential, commercial, and institutional throughout the distribution. To investigate this further, a series of Wilcoxon-Mann-Whitney tests were conducted to compare each land use pair. For all potential land use comparisons, data associated with Industrial land use were found to be derived from different data populations than Residential, Commercial, and Institutional land uses, and Freeway land use was found to be derived from a different population than Commercial and Residential. Based on the tests performed, the central tendencies of the data associated with Commercial, Institutional, and

Residential land uses do not appear to be statistically different and were combined for the pollutant ratio development (Appendix B and Figure 8).

TSS EMCs were developed for the three land use categories by taking the arithmetic mean of the natural log-transformed distributions, using the natural logs of the mean and the standard deviation as shown in the Equation 4-5 below (from Geosyntec and Wright Water Engineers, 2009).

$$Sample\ Mean = \exp\left(\mu_{ln} + 0.5\sigma_{ln}^2\right) \quad \text{Eq. 4-5}$$

Where:

exp = e to the power of

μ_{ln} = the mean of the natural log-transformed distribution

σ_{ln}= the standard deviation of the natural log-transformed distribution

Table 5: TSS EMCs by Land Use

Land Use	μ_{ln}	σ_{ln}	TSS EMC (mg/L)	Notes
Residential/ Commercial/ Institutional	4.07	0.95	92	Concentration data are not statistically different between these land use classes and the combined EMC is shown
Freeway	4.39	0.86	117	Concentration data are statistically different from the other land use classes
Industrial	4.79	0.79	166	Concentration data are statistically different from the other land use classes

Note: mg/L - milligrams per liter

Combined Pollutant Loading

The PCBs and TSS concentrations are summarized in Table 6 for eight distinct land use categories. All "new" land uses are assumed to have the same PCBs concentration, consistent with the RWSM findings. "Old" and "New" land use-based TSS concentrations were assumed to be the same for the same land use categories as information to categorize available TSS data into "Old" and "New" land uses was not available.

Table 6: Resulting Average Concentration and Proposed Pollutant Ratios

Land Use Category	PCBs Average Concentration (ng/L)	TSS Event Mean Concentration (mg/L)
New Residential/ Commercial/ Institutional	0.2	92
New Freeway	0.2	117
New Industrial	0.2	166
Old Residential	4	92
Old Commercial/Institutional	40	
Old Transportation	40	117
Old Industrial and Source Areas	204	166

It is not expected that Regulated Projects would have "Old" designated land uses within their on-site drainage area required to be treated for C.3 compliance, since redeveloped areas triggering C.3 would be considered "New" land uses following redevelopment (i.e., which would result in resurfacing and material replacement of those building materials that may contain PCBs). For any instances where "Old" land uses are part of the Regulated Project that the owner is seeking alternative compliance for, the "Old" portion of the area would need to be treated on-site or, if that is infeasible, be subject to limitations on the compliance units eligible for purchase on the basis of the land use associated with the compliance unit. See Table 7 for a matrix of Pollutant Ratios that would be applied for different Regulated Project land use to compliance unit land use exchanges.

Table 7: Pollutant Ratios for Identified Land Use Categories

Exchange Ratio Matrix		Off-Site Project Land Use Category			
		Residential, Commercial, or Institutional [1]	**Transportation [2]**	**New Industrial**	**Old Industrial and Source Areas**
Regulated Project Land Use Category	**Residential, Commercial, or Institutional [1]**	1.0	1.0	1.0	1.0[3]
	Transportation [2]	1.3	1.0	1.0	1.0[3]
	Industrial	1.8	1.4	1.0	1.0[3]

Notes: [1] Includes adjacent collector and local roadways.
[2] Transportation includes interstate highways, freeways, multilane highways, and principal arterials consistent with findings of the American Associate of State Highway and Transportation Officials (2015).
[3] Net environmental benefit discount applied to purchase (Section 4.3).

4.2.4 Equivalent Acres Greened Summary

For Regulated Projects, the required Equivalent Acres Greened is calculated as summarized in Equation 4-6, based on the attributes of the Regulated Project and the Equivalent Acres Greened compliance units purchased.

$$Equivalent\ Acres\ Greened_{RP} = Runoff\ Generating\ Acres_{RP} \times Ratio_{Rainfall} \times Ratio_{Pollutant} \quad \text{Eq. 4-6}$$

Where:

Runoff Generating $Acres_{RP}$ = The runoff generating acres for which the Regulated Project owner is seeking alternative compliance (100% of impervious surfaces and 10% of pervious surfaces).

$Ratio_{Rainfall}$ = Calculated using Table 3 and Figure 7 (minimum value of 1.0).

$Ratio_{Pollutant}$ = Determined as described in Table 7.

For non-Regulated project buyers (e.g., Permittees purchasing Equivalent Acres Greened for retrofit GSI needs and other non-regulated projects), the equivalency demonstration is not required; Equivalent Acres Greened compliance units for purchase are calculated as:

$$Equivalent\ Acres\ Greened = Runoff\ Generating\ Acres_{non-Regulated\ Project\ purchase} \quad \text{Eq. 4-7}$$

Some non-Regulated project buyers may want to purchase Equivalent Acres Greened compliance units on the basis of impervious acres treated rather than Runoff Generating Acres. The impervious acres treated per compliance unit will range and may be slightly lower than the Runoff Generating Acres depending on the land area treated by the Off-Site GSI Project generating the compliance units.[18] This information would be provided in the RAC System Tracking Tool for each compliance unit.

4.3 Net Environmental Benefit

Provision C.3.e requires a net environmental benefit through the alternative compliance approach. To provide a net environmental benefit for the Contra Costa County RAC System, a "NEB Ratio" is applied to Equivalent Acres Greened units when calculating participant compliance purchase amounts. The baseline NEB Ratio is proposed at 1.1 for Regulated Projects participating in the Contra Costa County RAC System, such that the additional 0.1 Equivalent Acre Greened for each acre of impact will provide a net increase in impervious surface treated and resulting net reduction in flow and/or pollutant load. For buyers not subject to MRP Provision C.3.e alternative compliance requirements (e.g., Permittees seeking Equivalent Acres Greened to meet GSI retrofit needs and other non-Regulated projects), the NEB Ratio is 1.0, providing equivalent impervious surface treatment.

Equivalent Acres Greened units generated by Off-Site GSI Projects that treat "Old Industrial" land uses are proposed to be exchanged to Regulated Projects associated with "New Residential," "New Commercial," "New Institutional" or "New Transportation" at a discounted WQB Ratio of 1.0 to encourage their exchange. Only Equivalent Acres Greened units treating "Old Industrial" land use would be allowed to be sold at the discount. For these compliance units, the Off-Site GSI Facility would be treating additional pollutant load beyond that required to meet equivalent pollutant loading due to the much higher PCBs loading from "Old Industrial" land uses. For these exchanges, equivalent impervious surface treated and equivalent reduction in flow will also be provided through the 1.0 NEB ratio.

4.4 Required Baseline(s)

Off-Site GSI Projects used to generate Equivalent Acres Greened compliance units must meet the baselines described below:

[18] The difference between Runoff Generating Acres (equal to Equivalent Acres Greened for non-Regulated buyers) and impervious acres is not expected to be large in most cases as only 10% of the treated pervious area is included in the Equivalent Acres Greened calculation. For example, for a 10-acre 65% impervious drainage area treated by an Off-Site GSI Project, there are 6.5 impervious acres and a total of 6.85 Runoff Generating Acres per the RAC System calculation. Non-Regulated project buyers who must purchase on the basis of impervious acres may therefore need to purchase slightly more Equivalent Acres Greened compliance units to meet their needs.

1. **Off-Site GSI Projects must treat drainage area(s) that are currently untreated by GSI facilities** – If a portion of a drainage area tributary to a proposed Off-Site GSI Project is already treated with GSI, that portion of the drainage area cannot be exchanged as Equivalent Acres Greened compliance units.
2. **Any acres required to be treated for compliance with an NPDES permit are not eligible to be certified as Equivalent Acres Greened compliance units** – Runoff Generating Acres captured and treated by Off-Site GSI Projects are not eligible if they are required to be treated to meet compliance with the MRP; the Phase II General Permit; the Industrial General Permit (Order No. 2014-0057-DWQ, IGP); an individual NPDES Permit; or any other NPDES permit. If an Off-Site GSI Project is constructed such that only a portion of its drainage area(s) require(s) NPDES compliant treatment, the non-Regulated portion of the drainage area(s) only may be eligible to generate Equivalent Acres Greened.

Additional information regarding eligibility is provided in Section 5.

4.5 Compliance Purchase Calculation Methods

The number of Equivalent Acres Greened compliance units purchased by a buyer and the Net Environmental Benefit are incorporated into the capital compliance purchase and calculated as follows:

$$Purchase_{Compliance} = (Equivalent\ Acres\ Greened \times NEB\ Ratio) \times Cost_{EAG} + Payment_{Administrative} \quad \text{Eq. 4-8}$$

Where:

Equivalent Acres Greened	=	Required compliance units for equivalency; calculated as described in Section 4.2.4.
NEB Ratio	=	1.1 for Regulated Projects and 1.0 for other non-Regulated Project purchases. A discount ratio of 1.0 is applied for purchases of Equivalent Acres Greened units associated with Old Industrial land use.
$Cost_{EAG}$	=	Equivalent Acre Greened unit cost, developed as described in Section 6.
$Payment_{Administrative}$	=	Administrative payment, developed as described in Section 6.

For each exchange, the number of Equivalent Acres Greened units exchanged are tracked and marked as "sold" in the Contra Costa County RAC System Tracking Tool. For Regulated Project exchanges, the number of Equivalent Acres Greened exchanged is calculated as $(Equivalent\ Acres\ Greened \times NEB\ Ratio)$; this is the value included in the exchange ledger in the System Tracking Tool.

4.6 Ongoing O&M Fee

As indicated by MRP Provision C.3.e.i(2), and included as part of the basis to define compliance units, Regulated Projects participating in the Contra Costa County RAC System must provide a proportional share of the O&M costs for the Off-Site GSI Project. This is proposed to be accomplished through an ongoing O&M fee levied on Contra Costa County RAC System participants on a per "Equivalent Acre Greened" basis.

4.6.1 O&M Fee Mechanism

Through the development of this Summary Report, the Project Team explored a number of potential mechanisms for O&M. As these facilities are required to be maintained on a long-term basis, an upfront payment is not considered a viable solution. An upfront payment would likely not cover all potential future facility costs and could be prohibitively expensive for some participants. An ongoing O&M fee was identified as a sustainable approach to O&M that would minimize future risk of noncompliance.

The Project Team examined several different potential approaches for an ongoing O&M fee. Contra Costa County pursued a stormwater fee ballot measure in 2012, which failed, and other agencies throughout the state have had similar failures or have not wanted to pursue such a measure given the level of effort and potential for failure. Any solution that would require voter approval was therefore not considered a reasonable pathway. An assessment district was considered, but has limitations as the assessment must be associated with a "special benefit" that could be difficult to demonstrate when funds are pooled for Off-site GSI Projects located in different jurisdictions than where the assessment is paid. The Project Team has therefore identified and recommended a Countywide Community Facilities District as the approach for the ongoing O&M fee. The Community Facilities District fee would be levied on participating Regulated Project parcels on a cost per "Equivalent Acre Greened" basis.

There are some limitations with Community Facilities Districts, as this approach may limit participation from public agency buyers and additionally may limit payments for maintenance of Off-site GSI Projects located on private property. The Administrator of the Community Facilities District must still be identified, though it is anticipated that the Flood Control District would act as the fiduciary agent. These and other critical considerations will be explored during the next phase of the Contra Costa County RAC System development.

Given this, it is anticipated that participants who have opted to participate in the Contra Costa County RAC System would be charged annual, recurring O&M fees on a cost per "Equivalent Acre Greened" basis via two pathways:

1. Parcel-based participants (i.e., private or public Regulated Project participants) would ballot into the new Community Facilities District as part of their RAC System participation and be charged annually per an established rate schedule. A fee will continue to be levied on the parcel as long as the parcel participates in the Contra Costa County RAC System.
2. Non-parcel-based participants, including cities or other agencies purchasing compliance units for GSI retrofit needs and other purposes, would enter into a long-term agreement (duration to be determined) with the O&M fee Administrator and/or the Flood Control

District (acting as fiduciary agent), allowing them to be invoiced annually per an established rate schedule.

For both pathways, long-term participation in the Contra Costa County RAC System and subsequent recurring payment of O&M fee for long-term compliance with the MRP would be dependent on the RAC System continuing to be a compliance option under the MRP. See Section 6.4 for more information about ongoing O&M fee development.

5. CONTRA COSTA COUNTY RAC SYSTEM REQUIREMENTS

The Contra Costa County RAC System is structured to support Regulated Project owners within Contra Costa County with achieving alternative compliance as defined by MRP Provision C.3.e. The primary objective of the Contra Costa County RAC System is to enable Equivalent Acres Greened units generated from Off-Site GSI Projects treating nonpoint source urban stormwater runoff to be exchanged with nonpoint source Regulated Projects and other non-Regulated project buyers. Eligibility and restrictions for the Contra Costa County RAC System were developed to support alternative compliance as defined by the MRP. Requirements described in this Section will pertain to Phase 2 of the Contra Costa County RAC System and are subject to amendment in the future as the System expands (Section 8).

The process for collection of funds is described in Section 5.4. **Compliance with Provision C.3.d/C.3.f** (i.e., certification) and **C.3.h** (verification) for the proposed Contra Costa County RAC System are described in Section 5.6 and 5.7, respectively. Sections 5.6 and 5.7 also provide details about the **accounting and reporting system** (i.e., System Tracking Tool).

5.1 Eligible Participants

Eligible participants may include entities within West Contra Costa County or East County interested in exchanging Equivalent Acres Greened compliance units. These may include developers with Regulated Projects within the jurisdictions of Contra Costa County and Permittees with Regulated Projects fitting the category descriptions listed in MRP Provision C.3.b.ii. This may also include other non-Regulated entities. Any public or private entity that is able to operate within the constraints of the Contra Costa County RAC System and able to take actions that result in a demonstrable generation of Equivalent Acres Greened may implement Off-Site GSI Projects as potential compliance unit providers. This may also include third-party aggregators. CCCWP permittees must complete a Participant MOU (see Appendix C-2) for Regulated Projects within their boundaries and their jurisdictions to participate in the RAC System.

5.2 Eligible Regulated Projects and Other "Buyers"

For Regulated Project owners participating as buyers, the jurisdiction in which the Regulated Project is located may decide whether the Regulated Project is eligible to participate in the Contra Costa County RAC System. The decision by the jurisdiction may be based on the Regulated Project's location, density, land use type, or other factors. It is expected that high-density Regulated Projects that are not subject to hydromodification management requirements would be eligible to participate. Non-regulated project buyers are expected to be limited to MRP Permittees within the County as part of Phase 2 of the Contra Costa County RAC System.

There is potential for the Contra Costa County RAC System to be expanded more broadly to other interested non-Regulated project buyers if opportunities arise as part of Phase 2, or during Phase 3. These additional entities may include those subject to the NPDES General Permit For

Waste Discharge Requirements (WDRs) for Storm Water Discharges From Small MS4s[19] (Phase II General Permit) issued in 2013 and revised in 2015, 2016, and 2018 (California State Water Resources Control Board, 2013), Caltrans, or potentially other entities with TMDL compliance requirements, particularly if there are TMDL requirements for other pollutants of concern in the future. Projects that are under the jurisdiction of the Industrial General Permit (IGP; Order No. 2014-0057-DWQ as amended by Order No. 2015-0122-DWQ) or an individual NPDES permit, if interested in participating, are likely be considered on a case-by-case basis during Phase 2 of the Contra Costa County RAC System and beyond.

The Contra Costa County RAC System may additionally promote partnership opportunities for implementation of other water quality management practices in Phase 2 or beyond as part of future water quality goals. Other buyers would participate in the Contra Costa County RAC System as shown in Figure 4.

5.3 Eligible Off-Site GSI Projects

Off-Site GSI Projects, on public or private land in urban areas within Contra Costa County, that meet the baseline eligibility requirements outlined in Section 4.4 may be eligible to generate compliance units. All proposed Off-Site GSI Projects must meet the criteria set out by the CCCWP RAC Subcommittee and be certified by the jurisdiction in which the Off-Site GSI Project is located before the compliance units generated at the Off-Site GSI Project are available for exchange. The RAC Administrator and/or jurisdiction may review and approve compliance units and allow for them to be exchanged prior to the Off-Site GSI Facility being constructed. The RAC Administrator and/or local jurisdiction will likely only allow this in specific cases where there is a high level of certainty that the Off-Site GSI Facility will be constructed. In this case, construction must be completed within three years of initial exchange, after which Off-Site GSI Projects must be certified and compliance units confirmed (see Section 5.6). All Off-Site GSI Projects are subject to ongoing verification processes (see Section 5.7).

It is envisioned there would be an application process to allow for approval that proposed compliance units preliminarily meet RAC System requirements, which compliance unit providers may complete for this assurance prior to conducting design and construction of Off-Site GSI Projects. Unit providers who do not complete the pre-screening application process would still be eligible to request certification of compliance units generated from Off-Site GSI Projects they have constructed, though they run the risk that the constructed project has not addressed a requirement for certification that could have been identified through pre-screening. If the RAC System Off-Site GSI Projects are implemented through a pay-for-performance or CBP3 contracting process, an optimized suite of Off-Site GSI Projects located on both public and private land may be sought through a request for proposals. More information about what a pay-for-performance or CBP3 process would entail is provided in Section 6.6.

Interested compliance unit providers must demonstrate control of the property where the Off-Site GSI Project would be or has been implemented. Off-Site GSI Projects are expected to utilize the

[19] Water Quality (WQ) Order 2013-0001-DWQ NPDES No. Cas000004 as amended by Order WQ 2015-0133-Exec, Order WQ 2016-0069-Exec, WQ Order 2017-XXXX-DWQ, Order WQ 2018-0001-Exec, And Order WQ 2018-0007-Exec.

pre-approved control measures (Section 4.2.1.2) and must be maintained and operated on a long-term, ongoing basis. These Off-Site GSI Projects would be managed following an O&M plan and/or agreement that is consistent with any relevant land use restrictions, such as easements or deed restrictions; the O&M plan would be required to be recorded to the parcel record(s) to ensure the property is managed consistent with that plan. Any entity seeking to construct non-preapproved control measures, with the intent of generating compliance units, must meet all guidelines established through the processes described in Section 8.2.

Pre-constructed facilities may be eligible for inclusion in the Contra Costa County RAC System as Off-Site GSI Projects. At this time, it is envisioned that pre-constructed facilities built in year 2020 or later may be eligible providing they meet the required baselines (see Section 4.4).

5.4 Exchanges

Generated compliance units from approved Off-Site GSI Projects would be entered into the Contra Costa County RAC System Tracking Tool by the approving entity (Section 5.6). Each compliance unit would have attributes indicating the associated rainfall zone and land use(s). Once entered into the RAC System Tracking Tool, these compliance units could be exchanged with participating buyers using the compliance purchase equations. If compliance units are approved for exchange prior to construction, the compliance units must be certified within three years of initial exchange when the Off-Site GSI Facility generating the compliance units is fully constructed. Visual schematics of exchanges between different entities and associated roles are provided as Figures 9a through 9f.

It is envisioned that exchanges would be facilitated by Permittees during Phase 2 of the Contra Costa County RAC System. The required Equivalent Acres Greened compliance units would be identified and calculated using the RAC System Tool based on the rainfall zones and land uses associated with the Regulated Project and compliance units, respectively, as applicable. The calculation would also include the appropriate NEB Ratio.

Following calculation of needed compliance units, the Permittees would reserve available compliance units in the RAC System Tracking Tool and initiate the exchange. The exchange would be completed and the purchased compliance units would be identified as “sold” in the RAC System Tracking Tool following payment for the required compliance purchase to the Permittee. Non-Regulated project buyer exchanges are envisioned to be facilitated by the CCCWP RAC System Administrator. In this case, all of the actions listed would be performed by the RAC System Administrator to facilitate the exchange.

5.5 System Restrictions

5.5.1 Land Use Restrictions

The Contra Costa County RAC System does not prohibit the participation of either Regulated Projects or Off-Site GSI Projects based on their land use type. Any land use that would require coverage under the IGP or an individual NPDES Permit would not be expected to participate in the Phase 2 of the System. Jurisdictions may choose to disallow certain Regulated Projects from participating with reasonable cause, such as projects that have adequate space within their

development footprint to implement on-site treatment or development that occurs on a known source property site.

5.5.2 Watershed and Jurisdictional Restrictions

The Contra Costa County RAC System would require all Regulated Projects and Off-Site GSI Projects be located within Contra Costa County. All exchanges would occur between entities draining to the San Francisco Bay watershed within Contra Costa County. During Phase 2 of the Contra Costa County RAC System implementation, Regulated Projects subject to Provision C.3.g. are not expected to seek participation in the Contra Costa County RAC System to cover hydromodification management requirements off-site through the RAC System due to the need to address impacts to downstream San Francisco Bay tributaries (i.e., which would require exchanges at a smaller watershed scale). However, Regulated Projects subject to Provision C.3.g. may still utilize the RAC System to meet their Provision C.3.e requirements (i.e., LID/GSI requirements) off-site.

During Phase 2 of RAC System implementation, exchanges may occur between West Contra Costa County (i.e., within the Water Board Region 2 boundary) and East Contra Costa County. While both County areas are covered under the MRP, each Region has different TMDLs, so any party participating in an exchange between West County and East County would need to consider potential water quality compliance outcomes of such an exchange.

It is possible that future expansion of the RAC System would allow for inter-county exchanges with other areas that that drain to the San Francisco Bay.

5.6 Certification Requirements

The design, quantification of compliance units, and implementation of an Off-Site GSI Project must be certified upon project completion, by the Permittee in which jurisdiction the Off-Site GSI Project is located. Certification of the Off-Site GSI Project verifies that the Equivalent Acres Greened compliance units were implemented consistent with the Off-Site GSI Project review and approval process, if it takes place prior to certification. The review and approval process confirms that the compliance units proposed to be generated by the Off-Site GSI Project are calculated correctly and identifies the compliance units as available for exchange.

In most cases, it is expected that the Off-Site GSI Project would be an LID/GSI treatment facility with tributary drainage area(s) that is not associated with or include a Regulated Project. There may be situations where an LID/GSI treatment facility is built as part of a Regulated Project but is designed to treat a drainage area not associated with that of the Regulated Project (e.g., when a private Regulated Project elects to construct LID/GSI in the public right-of-way along the project frontage); in this case, the private Regulated Project developer may also be eligible to exchange generated Equivalent Acres Greened compliance units. In this case, the Certifying Entity (i.e., local Permittee) would be responsible for confirming the total compliance units generated by the project, calculating the quantity of compliance units needed by the Regulated Project for C.3 compliance, and the excess quantity of compliance units available for exchange. In the case where the certifying entity could be the same entity as the seller, an independent 3rd party could be tasked with certification.

In some cases where there is high certainty that an Off-Site GSI Project will be constructed, a pre-construction certification process may be conducted to allow compliance units to be available for exchange up to three years prior to final construction. In all cases, the final certification process for the Off-Site GSI Project and associated compliance units would take place after the Off-Site GSI Project is fully constructed and the O&M responsibility has been assigned. The certification process consists of the following steps:

1. Entry of the Completed Off-Site GSI Project into the System Tracking Tool: Upon completion of Off-Site GSI Project design and/or construction certification processes, the Certifying Entity will provide Off-Site GSI Project attribute information, which will be uploaded to the RAC System Tracking Tool (in a manner to be determined). If compliance units will be made available prior to Off-Site GSI Project construction, the Pre-Construction Off-Site GSI Project Data and Design Certification Form (Appendix C-3) would be completed as part of pre-construction review and design approval. For all Off-Site GSI Projects, once the Project is constructed, the Off-Site GSI Project Data Form (Appendix C-2) would be completed or updated with final Project information. If Off-Site GSI Project compliance units will not be made available until after construction, only the Off-Site GSI Project Data Form (Appendix C-4) is needed.

   Attributes include: facility ID number; facility type and location; drainage area size(s), location(s), and land use(s); total impervious and pervious surface area within the drainage area(s); total Equivalent Acres Greened; facility owner; project cost; and associated multiple benefits. In some cases, the RAC System Administrator and local jurisdiction may allow the Compliance Units to be available for exchange after this step. If the Off-Site GSI Project is entered into the RAC System prior to completion of construction, post-construction certification information would be input at a later date.

   The other documents related to the certification process (e.g., the construction inspection checklists, O&M Plan and Agreement, and Post-Construction Certification Form, described in Steps 2-6 below) will also be uploaded to the RAC System Tracking Tool when completed. All of the data and documentation for the certified Off-Site GSI Project must be completed and uploaded within three years of initial exchange of compliance units. For most Off-Site GSI Projects, the compliance units become available for exchange(s) with Regulated Project(s) following upload of all certification information.

2. Design Review by the Certifying Entity: The Certifying Entity would review the design documents for the Off-Site GSI Project, including calculations, plans, details, and specifications, and would determine whether the LID/GSI treatment facility meets the design requirements established in MRP Provision C.3 and is consistent with standard design practice described in the CCCWP's Stormwater C.3 Guidebook (CCCWP, 2017). The design review would follow the Certifying Entity's typical development application or capital project review process, leading to issuance of a building permit (for a private project) or commencement of a bid procurement and award (for a public project). If an alternative delivery approach (e.g., design-build or progressive design-build) is used for public projects, the certification could occur concurrently with design and construction. If compliance units will be made available prior to Off-Site GSI Project construction, the Certifying Entity would complete design review in the Pre-Construction Off-Site GSI

Project Data and Design Certification Form (Appendix C-3). After the Off-Site GSI Project is constructed, the Certifying Entity will complete Section 1 (Design Review) of the Off-Site GSI Project Post-Construction Certification Form (Appendix C-5) to certify that the design review was completed and that the design meets the C.3 requirements and standard practices. If Off-Site GSI Project compliance units will not be made available until after construction, only the Off-Site GSI Project Post-Construction Certification Form (Appendix C-5) is needed.

3. Construction Inspection by the Certifying Entity: The Certifying Entity would conduct inspections of the Off-Site GSI Project, at appropriate stages during and at completion of construction, to ensure that the Off-Site GSI Project is constructed in accordance with approved plans. The Certifying Entity would complete the CCCWP Stormwater Treatment Facilities Construction Inspection Checklist (see Appendix C-6) for each inspection. If the Certifying Entity approves making the compliance units available for sale prior to construction, the Construction Inspection would take place following Step 4.
4. Entry of the Completed Off-Site GSI Project into AGOL Tool: Following the upload of Off-Site GSI Project data to the System Tracking Tool, the Certifying Entity would also upload data to CCCWP's current "C3 Project Tracking and Load Reduction AGOL Application" to track installed stormwater treatment facilities and estimate pollutant loads reduced. The data in AGOL would be used to generate reports required by the MRP, including to demonstrate compliance of any Regulated Project(s) that purchase compliance units from the Contra Costa County RAC System, per Provision C.3 requirements.[20]
5. Operation and Maintenance Assurance: The Certifying Entity would ensure that an O&M Plan is prepared for the Off-Site GSI Project and would review the Plan for consistency with the CCCWP Stormwater C.3 Guidebook and Stormwater Facilities O&M Plan Template (Appendix C-6). The Certifying Entity would also ensure that an O&M Agreement, with the entity responsible for maintenance of the Off-Site GSI Project, is prepared, signed, and recorded to the parcel, if appropriate. The O&M Agreement would be prepared consistent with the CCCWP Stormwater Management Facilities O&M Agreement Template (Appendix C-7) and include the O&M Plan.
6. Post-Construction Certification: The Certifying Entity will complete Sections 2 and 3 of the Off-Site GSI Project Post-Construction Certification Form (Appendix C-5) to certify that construction inspections were conducted, and the facility was constructed consistent with the final plans (i.e., completion of Step 2), and that the O&M Plan and Agreement for the Off-Site GSI Project were prepared and signed (i.e., completion of Step 3).

More information about the specific forms and templates used to document the certification process is provided in Section 10.

[20] There are currently no regulatory requirements to report data on Off-Site GSI Projects, compliance metrics, and exchanges from the System Tracking Tool. However, this is subject to change with the upcoming MRP reissuance.

5.7 Verification Requirements

Ongoing verification of the Off-Site GSI Project's performance is important for ensuring that the project is regularly maintained and continues to adequately treat the Equivalent Acres Greened associated with the Regulated Project(s). Verification will be performed via the municipal O&M verification inspection programs currently required by the MRP for all installed treatment facilities. In most cases, the O&M verification inspections of the Off-Site GSI Project will be conducted by the jurisdiction in which the Off-Site GSI Project is located (i.e., the "Verifying Entity" is the same as the Certifying Entity). However, there may be situations in which the Certifying Entity delegates the responsibility for O&M verification inspections to another entity. This is acceptable as long as the Verifying Entity is not the same entity designated in the O&M Agreement as responsible for routine maintenance of the project, if the project is privately-owned.

The verification process for the Off-Site GSI Project and associated compliance units takes place following completion of construction and throughout the life of the Off-Site GSI Project. The verification process consists of the following steps:

1. O&M Verification Inspection by the Verifying Entity: The Verifying Entity would conduct inspections of the Off-Site GSI Project at such intervals the Permittee deems appropriate to ensure that the LID/GSI treatment facility is adequately maintained for optimal performance. The Verifying Entity would complete the CCCWP Stormwater Facility O&M Inspection Report form (Appendix C-9) for each inspection. If any deficiencies are found, they would be documented on the form and discussed with the responsible party. Follow-up inspections would be conducted until the deficiencies are corrected and documented on the inspection form. Information from these inspection forms would be stored in the Verifying Entity's local database for O&M verification inspection data, as required by the MRP.
2. Summary of Off-Site GSI Project Verification: On an annual basis, the Verifying Entity would complete the Off-Site GSI Project O&M Verification Form (Appendix C-10) that summarizes verification actions, including documenting that O&M was performed, the project was inspected (by whom and when), and any deficiencies were corrected. The Verifying Entity would upload this completed document to the System Tracking Tool to demonstrate ongoing verification of the project.

More information about the specific forms used to document the verification process is provided in Section 10.

6. COMPLIANCE PURCHASE AND O&M ASSESSMENT COST BASES

Section 6 covers financial aspects of the Contra Costa County RAC System, and Sections 6.3 and 6.5 describe aspects of **the processes for collection and timely use of funds,** required for proposed program submittal per MRP 3 Fact Sheet.

6.1 Cost Basis Considerations

The Contra Costa County RAC System is expected to be primarily funded through compliance purchases, similar to most in-lieu payment (or fee) programs, which are typically receipt-based. Financial solvency is essential to the ability of these types of programs to operate. Under-collection of payments is a threat to the sustainability of an in-lieu payment program. The typical program portfolio includes the program's net assets (e.g., credits, cash), based on payment collection, and liabilities (e.g., existing and future contracts, administrative costs necessary to complete program requirements). Accordingly, it is essential that the payments are sufficient to cover the actual program project and administrative costs and risk factors. Given key regulatory and facility cost factors that apply to the Contra Costa County RAC System, there are some challenges to predicting program project and administrative costs, and additional considerations are needed for the RAC System's compliance purchase cost basis.

While some "Equivalent Acres Greened" compliance units may be exchanged in advance of Off-Site GSI Project construction, this would only be allowed when there is high certainty that the Off-Site GSI Project would be constructed. This approach could allow for advance funding of Off-Site GSI Projects through exchange of their compliance units, while also ensuring that the compliance units generated are tied to specific project benefits. Given uncertainty around implementation timelines and the potential for Off-Site GSI Projects to change for a variety of reasons, however, most Off-Site GSI Projects would likely need to be funded upfront through other means to avoid compliance unit risks in the RAC System. A source of upfront funding or financing will be needed to allow for compliance unit generating Off-Site GSI Projects to be implemented.

Additionally, the use of standard municipal procurement processes to build these projects could cause the generated Equivalent Acres Greened compliance units to be prohibitively expensive, based on existing GSI design and construction cost data compiled from Contra Costa County Permittees.

Regulated Project owners may choose to act as the compliance unit provider and construct an Off-Site GSI Project in a location other than their Regulated Project(s) to generate compliance units to apply toward future Regulated Projects. Other private entities could be relied upon to construct Off-Site GSI Projects at a lower cost than standard public procurement processes, through a pay-for-performance or CBP3 approach. However, these entities often achieve cost savings through large volumes of Off-Site GSI Project implementation (and resulting compliance unit generation) and may not be interested in participating in a program with low or unknown demand, due to the potential risk of not selling compliance units associated with Off-Site GSI Projects they build. In addition to the upfront construction requirements, demand uncertainties, and high potential cost for traditional procurement, there is also a desire for transparency in setting the compliance purchase price. All of these challenges require an innovative approach to

cost setting and program implementation. The proposed approach to address these uncertainties is discussed below.

6.2 Compliance Unit Demand Considerations

6.2.1 Permittee Demand

The Contra Costa Permittees may want to purchase Equivalent Acres Greened compliance units to fulfill their water quality compliance or planning needs, including:

- Requirements to construct LID/GSI facilities for Regulated Projects, including public parcel and new roadway projects;
- GSI public retrofit projects; and
- TMDL compliance.

Based on LID/GSI cost data collected from Contra Costa County Permittees, the cost to construct LID/GSI projects to meet these project needs using traditional procurement processes are very high. For example, the approximate cost to build the public GSI projects identified in the Permittees' Green Infrastructure Plans by 2040 to address the PCBs and mercury TMDLs in Contra Costa County is estimated to exceed $1 billion (CCCWP, 2020). Based on a recent examination of costs for seven GSI projects implemented by Contra Costa County jurisdictions, treating an acre of stormwater runoff can cost over $300,000 (in 2020 dollars). This is consistent with average per-acre treated green streets costs documented in San Mateo County in 2021.

6.2.1.1 Programmatic Demand Option

With sufficient compliance unit demand, there is more certainty that compliance units would be sold; thus, there would be more interest from entities to build Off-Site GSI Projects as a result of the lower financial risk to participating in the program. One way to provide demand certainty is to establish a minimum program purchase guarantee ("Programmatic Demand"). This initial "Programmatic Demand" could be purchased by Permittees to allow for sufficient exchange activity during Phase 2 of the Contra Costa County RAC System. Guaranteed exchange activity would better enable the Contra Costa County RAC System to achieve economies of scale, demonstrate proof of concept, garner interest, and grow the System. If Regulated Project owners or other entities can provide guarantees of compliance unit purchase at the initiation of Phase 2, they could also be included in the initial Programmatic Demand.

Permittees interested in participating in the Programmatic Demand purchases would identify the Equivalent Acres Greened compliance units they may purchase over Phase 2 of RAC System operation to meet their C.3 (and potentially, C.11/C.12) compliance requirements. In addition to providing economies of scale for the Contra Costa County RAC System launch, it is expected that this approach would allow for a lower compliance cost for Permittees. Furthermore, financing (or funding) and constructing Off-Site GSI Projects to meet an initial upfront Programmatic Demand (Section 6.3) would allow for completing CEQA and generating compliance units prior to exchange.

In the Programmatic Demand scenario, Permittees could identify the cost to construct LID/GSI facilities to meet their compliance requirements through traditional procurement and consider

what (lower) price they would be willing to pay instead through the Contra Costa County RAC System. Permittees could then identify the quantity of compliance units they would want to purchase, if Equivalent Acres Greened compliance units were available at their suggested price. This combined quantity of Equivalent Acres Greened compliance units identified by County Permittees would serve as the "Programmatic Demand" for Equivalent Acres Greened compliance units. Permittees could anticipate cost savings in meeting their GSI permit requirements through this approach.

With the knowledge that the Contra Costa County RAC System has a guaranteed baseline demand for compliance units, private compliance unit providers would have increased interest in participating in the Contra Costa County RAC System.

6.2.2 Regulated Project Demand

Currently, the compliance unit demand from Regulated Projects is difficult to determine. Challenges to estimating the amount of Regulated Project demand include fluctuations in the development market, difficulty in identifying potential developers over the next five to twenty-plus years, and the potential for developers to be reticent to provide their suggested demand without knowing more about the Contra Costa County RAC System. A number of developers have applied for MRP Provision C.3.e.ii, "Special Project"[21] status within the County, and likely more could be interested in making a compliance purchase to not have to construct stormwater treatment facilities on-site, especially for higher value or higher density redevelopment projects.

Development projections can be used to inform estimates of potential Regulated Project demand. As part of the RAA prepared for Contra Costa County (CCCWP, 2020), private development that occurred between 2003 and 2019 was compiled geospatially, and future private development was projected for 2020, 2030, and 2040. To forecast future private development area, CCCWP used the output of UrbanSim, a model developed by the Urban Analytics Lab at the University of California under contract to the Bay Area Metropolitan Transportation Commission (MTC) (MTC, 2021; Waddell, 2013). The UrbanSim modeling system was developed to support the need for analyzing the potential effects of land use policies and infrastructure investments on the development and character of cities and regions. The Bay Area's application of UrbanSim was developed specifically to support the development of Plan Bay Area, the Bay Area's Regional Transportation Plan/Sustainable Communities Strategy-equivalent planning effort (CCCWP, 2020).

MTC forecasts growth in households and jobs and uses the UrbanSim model to identify new development and redevelopment sites to satisfy future demand. Model inputs include parcel-specific zoning and real estate data; model outputs show increases in households or jobs attributable to specific parcels. The methods and results of the Bay Area UrbanSim model have

[21] Per the MRP 3 Provision C.3.e.ii: "Certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces or create less "accessory" impervious areas and automobile-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed … in Provision C.3.e.ii.(2)."

been approved by both MTC and Association of Bay Area Governments' Committees for use in transportation projections and the regional Plan Bay Area development process.

The CCCWP RAA process used outputs from the Bay Area UrbanSim model to map parcels predicted to undergo new development or redevelopment in each Contra Costa jurisdiction at the time increments specified in the MRP (i.e., 2020, 2030, and 2040). The resulting maps were reviewed by Permittee staff for consistency with local knowledge and local planning and economic development initiatives and were revised as needed. Notably, the specific parcels identified by UrbanSim may or may not be realistically developed; however, the quantity of acres developed and approximate locations of, and zoning associated with, the parcels is considered representative of potential development in the County.

A summary of UrbanSim projections for 2021 – 2030 and 2031 – 2040 for the County are provided in Table 7. Development estimates for the County are separated out by Water Board region and estimated hydromodification management (HMP) requirements. Development projected as high density, with an assumed imperviousness of 85%, has been further separated out since these types of Regulated Projects may be most likely to seek alternative compliance for stormwater.

Table 8: Summary of UrbanSim Development Projections

Region	HMP Status	2020 – 2030 Equivalent Acres[1] by Development Density		2030 – 2040 Equivalent Acres[1] by Development Density		2020 - 2040 Equivalent Acres[1] by Development Density		
		Low/Med	High	Low/Med	High	Low/Med	High	All
Region 2	HMP Applicable	145	172	207	129	352	301	653
	HMP Exempt	59	**249**	77	**271**	136	**520**	656
	HMP Undetermined	7	9	75	1	82	10	92
	Region 2 Total	*211*	*430*	*359*	*401*	*570*	*831*	*1,401*
Region 5	HMP Applicable	279	21	562	50	841	71	912
	HMP Exempt	1,248	15	158	43	1,406	58	1,464
	HMP Undetermined	0	0	0	0	0	0	0
	Region 5 Total	*1,527*	*36*	*720*	*93*	*2,247*	*129*	*2,376*
Countywide Total		***1,737***	***466***	***1,081***	***493***	***2,818***	***959***	***3,777***

[1] Defined as 100% of directly connected impervious areas and 10% of directly connected pervious areas.

The UrbanSim development projections estimate approximately 520 acres of high-density, HMP exempt development in Region 2 that is expected to be constructed over the next 20 years (i.e., 249 acres from 2020 – 2030 and 271 acres from 2030 – 2040, see bolded values in Table 8). However, the amount of this development that may ultimately take place in the Contra Costa County RAC System is unknown.

6.3 Off-Site GSI Project Implementation Considerations

While some Off-Site GSI Projects could be partially funded or financed through sale of compliance units in advance of final construction, this would only be allowable for select Projects. A source of funding or financing would be needed to construct most Off-Site GSI Projects prior to collection of compliance purchase payments. The project delivery approaches used to implement Off-Site GSI Projects under the Contra Costa County RAC System would determine the ability to leverage private financing and the overall administrative structure of the program.

6.3.1 Upfront Financing of RAC System Off-Site GSI Projects

One option to implement RAC System Off-Site GSI Projects is to finance a suite of Off-Site GSI Projects to satisfy the initial projected demand or Programmatic Demand, if implemented. Financing could be obtained through public programs, such as the Clean Water State Revolving Fund (CWSRF) or Water Infrastructure Finance and Innovation Act (WIFIA) loans.

There is the potential that Permittee loans for compliance units purchased specifically for TMDL compliance that are not ultimately purchased by private developers could be forgiven through a public finance pathway. If the compliance unit-generating Off-Site GSI Projects are financed through CWSRF or WIFIA, the TMDL compliance unit portion could potentially be part of the loan that is ultimately "forgiven" because LID/GSI facilities in older urban or industrial areas provide water quality improvements that meet the intent of the CWSRF and WIFIA programs. Other compliance purchases by permittees (e.g., GSI retrofit requirements) are current or expected permit compliance requirements and are consequently less likely to be forgiven under this financing structure.

6.3.2 Alternative Delivery Approaches

There are three principal approaches for delivery of Off-Site GSI Projects to generate Equivalent Acres Greened compliance units: (1) traditional design-bid-build procured by the program administrator using the loan funds (or after compliance purchase payments are collected); (2) performance-based contracting for turn-key and fixed-price solutions; and (3) public-private partnership (P3), where a private enterprise engages with the program administrator and plays a larger role in administering the program and delivering the off-site projects.

6.3.2.1 Traditional Design-Bid-Build

Traditional public project funding involves a funder that pays a private entity (engineer/contractor) for a pre-defined scope of work. The payment schedule is typically linked to direct cost reimbursement and may include mark-up for overhead costs and an acceptable profit. If profit is allowed, it is linked to the project cost, providing an incentive for the private entity to increase costs in both the proposal phase and through change orders. Since the private entity is paid for work completed, and payments are not linked to outcomes, the funder bears all project risks. The funder may need to issue multiple Requests for Proposals (RFPs) for a given project for project design, construction management, and construction.

6.3.2.2 Performance-Based Contracts

Performance-based contracts (or simply performance contracts) (PBCs) condition payments based on defined performance outcomes that reflect the quality of the project delivered. This

strategy typically requires private capital to finance project implementation. Funders pay implementers an agreed-upon price per compliance unit after pollutant load or volumetric reductions are verified and all requirements are met for certified compliance units. Since the Contra Costa County RAC System compliance purchases would not include O&M costs, those costs would be levied separately on the property on an annual basis (Section 6.4.4).

6.3.2.3 Public-Private Partnerships (P3s)

P3s are a relatively common way for the public and private sector to collaboratively deliver and maintain GSI projects. A CBP3 is a form of alternative delivery in which a government agency and private partner seek to improve both water quality and quality of life for a community through LID/GSI projects that meet multiple environmental and social metrics (e.g., metrics tied to workforce and equity benefits).

As noted above, there are less administrative burdens under the performance-based or P3 delivery models, often leading to cost savings. Traditional procurement requires significant management and oversight of every facet of a project, while PBCs and P3s require more limited oversight and fewer RFPs.

6.3.3 Pay-for-Performance or CBP3 Model for Compliance Unit Providers

Depending on the entity responsible for control measure O&M, the Contra Costa County RAC System could utilize one of two models for a pay-for-performance or CBP3 contract with compliance unit providers. A Design-Build-Finance (DBF) model could be utilized if Permittees and/or the Countywide Maintenance District perform ongoing maintenance, and a Design-Build-Finance-Operate-Maintain-Availability Payment (DBFOM-AP) model could be used if the compliance unit provider is required to perform ongoing maintenance.

A DBF model only obligates the compliance unit provider to finance and deliver an Off-Site GSI Project that generates the Equivalent Acres Greened. Payment for capital expenditure would be released by the CCCWP System Administrator upon successful certification of the Off-Site GSI Project and generated compliance units.

A DMFOM-AP model requires the compliance unit providers to be responsible for financing, while the Contra Costa County RAC System maintains control over payments and revenue collection and makes pre-established payments to the private entity for project delivery and performance commitments. This model would completely shift the financial risk for performance to the private sector. The contract would require provisions that allocate pooled Countywide Maintenance District O&M assessments to the compliance unit providers, contingent on successful verification of O&M, delivery on additional performance standards, and timely responses to maintenance requests.

6.3.4 Private Financing

Private capital's primary role in the project financing process is to assume risk, accelerate implementation, and achieve project implementation in the most efficient and cost-effective manner possible. There is a limited role for private capital unless there are elements of risk, outcome-based approaches, and payment schedules that may require upfront private capital. In the context of the envisioned Contra Costa County RAC System project delivery, the opportunity

to leverage private capital participation would primarily be through the performance-based contracting and P3 delivery models, not under traditional public project funding.

6.4 Cost Setting

It is assumed that the Equivalent Acre Greened unit cost ($Cost_{EAG}$) would be the same for all System buyers and would represent the average cost to generate an Equivalent Acre Greened compliance unit from Off-Site GSI Projects implemented through the Contra Costa County RAC System. As described in Section 8.4.2, the Equivalent Acre Greened unit cost would need to be revisited and potentially adjusted on a regular basis.

6.4.1 Other Compliance Purchase Considerations

The costs used to establish the compliance purchase cost basis would be based on full cost accounting, including expenses such as project planning, design, permitting, and construction costs, as well as administration of the Contra Costa County RAC System. Accordingly, the overall compliance purchase amounts would be determined by project costs, administrative costs, overhead inventory, and risk. Since O&M costs would be covered separately through payments to a separate fund, these costs would not be included.

Once the amounts of the compliance purchase cost components are established, it is crucial that the Contra Costa County RAC System has a process in place to regularly evaluate the sufficiency of the compliance purchase amounts and to adjust the amounts as needed. See Section 8.4 for additional considerations for compliance purchase component adjustments.

The compliance purchase approach offers developers the option to navigate the C.3.e payment obligations in a limited time frame and avoid the technical, complex, and evolving regulations that govern the implementation of these GSI projects. These two benefits save considerable time and money, and lower the risk to the developer, which may make it more likely that the developer participates. Conversely, if the developer has to undertake many on-site commitments and the marginal costs of LID/GSI compliance is nominal, then it could lessen the benefits of using the Contra Costa County RAC System.

6.4.2 Administrative Payment

An administrative payment is proposed to be incorporated into the compliance purchase amount. The administrative payment would include costs for CCCWP System Administrator, along with costs charged by the jurisdiction in which the Regulated Project is located. Administrative payment amounts would be developed through cost studies when fee schedules are updated by Permittees and will cover all staff and/or consultant hours, along with materials and overhead, to perform administrative functions needed for the Contra Costa County RAC System. CCCWP cost amounts will similarly be developed through fee schedule updates. This process is anticipated to be informed by Phase 1 of the System. Administrative functions that may be incorporated into the payment are anticipated to include, but may not be limited to:

- Review preliminary applications to the Contra Costa County RAC System;
- Conduct Regulated Project review, as needed;
- Identify compliance units for sale for interested buyers;

- Perform or confirm exchange calculations;
- Conduct plan review and oversight processes for Off-Site GSI Projects;
- Enter data into the System Tracking Tool;
- Conduct certification and verification processes; and/or
- Other System administrative tasks.

The administrative payment may include costs from multiple entities that are involved in any given exchange and could vary depending on the jurisdictions involved in the exchange. For example, for a given exchange, the payment could include administrative costs associated with (but not limited to):

1. Cost for processing the Regulated Project buyer, identifying compliance units for exchange, and tracking, by the jurisdiction in which the Regulated Project is located;
2. Cost for design and construction phase review and certification of the Off-Site GSI Project associated with compliance units purchased, by the jurisdiction in which the Off-Site GSI Project is located; and
3. System administrator costs for overall System administration.

Many programs collect an administrative fee between 5% and 20% on top of other program costs. The method of procurement delivery determines the scope and costs of administration. If the Contra Costa County RAC System adopts a traditional design/bid/build delivery method for procuring the Off-Site GSI Projects, it would require more staff to oversee the program than a performance-based contracting or CBP3 approach.

6.4.3 Ongoing O&M Fees

To meet the requirements of MRP Provision C.3.e, a proportional share of the O&M cost for the Off-Site GSI Project shall be obtained from the buyer through an ongoing O&M fee. Participating buyers would pay an annual ongoing O&M fee per Equivalent Acres Greened compliance unit at a fixed rate with escalation for inflation and other costs.

At this time, it is envisioned that the ongoing O&M fee would be levied through a Community Facilities District and/or through specific long-term agreements. In either case, the rate schedule would reflect the cost of conducting O&M activities for all of the Off-site GSI Projects in the System. It is anticipated that the rate schedule may be initially established through detailed O&M cost estimates for Off-Site GSI Projects expected to generate compliance units for the System, along with an estimated O&M reserve (if permitted, for Off-Site GSI Projects that have compliance units still un-sold), and administrative costs. Though individual participants may be purchasing compliance units associated with specific Off-site GSI Projects, the fee rate schedule would consider O&M costs for all the Off-Site GSI Projects included in the System. This approach would allow for equity and consistency across the program. It is envisioned that the O&M fee would be adjusted as needed over time as O&M cost data are collected for Off-Site GSI Projects implemented for the Contra Costa County RAC System to adequately cover the actual cost of O&M. The cost of O&M activities will be developed through a detailed engineer's

report prepared by a registered professional engineer certified by the State of California commissioned by the CCCWP RAC Subcommittee.

The ongoing O&M fee will also cover the costs for administering the O&M funding for the Contra Costa County RAC System. This portion of the fee will cover activities including, but not limited to: collecting (and potentially pooling) O&M fees, validating successful O&M verification, distributing O&M funds to entities performing O&M, managing the O&M reserve as applicable, and completing RAC System reporting, as needed.

6.5 System Fund Management

6.5.1 Contra Costa County RAC System Fund

Funds collected through the compliance purchase payments will be managed in a fund that is administered by the CCCWP RAC System Administrator. Fund management may entail, but is not limited to:

1. Mechanisms for transferring payments between the System Administrator and Permittees;
2. Tracking payments collected and confirming appropriate payment amounts;
3. Pooling collected compliance purchase payments into combined fund;
4. Paying back public financing loans;
5. Managing loans with Permittees;
6. Payments to compliance unit providers and/or pay-for-performance or CBP3 contractor(s);
7. Investments into additional compliance unit-generating Off-Site GSI Projects;
8. Tracking and managing administrative program costs; and/or

6.5.2 Ongoing O&M Fund

The O&M fee administrator and/or the Flood Control District (acting as fiduciary agent) would pool ongoing O&M fee funds and disburse funds as appropriate to the O&M effort spent by Permittees and/or private contractors performing O&M work with proof of completed O&M, as documented through the RAC System Tracking Tool. If O&M is conducted by a pay-for-performance or CBP3 contract, O&M efforts will be described in the contracting documents. The O&M Fund will also be required to conduct adequate tracking and perform financial reporting.

6.5.3 Harmonized and Pooled Funding

The Contra Costa County RAC System would provide authority to the CCCWP RAC System Administrator to pool funding resources as allowable. Pooling, if conducted, could include the Equivalent Acres Greened portion of the compliance purchases, multiplied by the NEB ratio as applicable (i.e., capital costs), and could include funds from other sources into the RAC System Fund. Pooling funds could enable the Contra Costa County RAC System to implement larger-scale projects and solutions. The unit cost of implementing small LID/GSI facilities (from any provider type) is typically higher than regional projects. Costs for design, mobilization,

construction, monitoring, and maintenance often become less expensive per unit on larger projects.

In addition, pooling of funds could facilitate leveraging low-cost financing sources, such as SRF funds; the capacity to link water quality financing with economic development and diversification funding sources; and the ability to work in partnership with private investors in the delivery of cost-effective GSI projects more quickly and with less risk to RAC System member agencies.

7. RISK AND UNCERTAINTY MANAGEMENT

Phase 2 of the Contra Costa County RAC System is anticipated to manage a variety of buyers, Off-Site GSI Projects, and participants across Contra Costa County's diverse landscape. With a multitude of elements to manage, there are likely to be risks and uncertainty that would need to be addressed to ensure that Permittees participating in the Contra Costa County RAC System would not face compliance liability. This section describes sources of uncertainty, followed by recommended management actions.

7.1 Sources of Uncertainty

Identified sources of uncertainty for the Contra Costa County RAC System are related to the variability of precipitation, pollutant concentration, control measure implementation, effectiveness and performance, and costs of constructing and maintaining Off-Site GSI Projects. Additionally, market demand for purchasing Equivalent Acres Greened compliance units is uncertain.

7.1.1 Capture of Equivalent Quantity of Stormwater Runoff and Pollutant Loading

The Equivalent Acres Greened compliance unit is designed to provide off-site equivalent quantity of stormwater runoff and pollutant loading in accordance with Provision C.3.e requirements for Regulated Projects. Precipitation and land use are the primary, non-management related factors that would influence the quantity of stormwater runoff and pollutant loading captured by Off-Site GSI Projects, respectively. As Contra Costa County contains a wide range of precipitation rates and historic land use, equating stormwater runoff and pollutant loading from a Regulated Project to an Off-Site GSI Project in different locations can be challenging. In addition, site-specific conditions may affect pollutant concentrations and control measure effectiveness and introduce a degree of uncertainty in environmental outcomes.

7.1.2 Risk of Noncompliance due to Project Failure

The failure in the implementation, operation, or maintenance of Off-Site GSI Projects can result in noncompliance for the Contra Costa County RAC System or System participants. As some compliance units may be exchanged up to three years before the Off-Site GSI Project generating the units is operational, a delay or failure to ultimately construct the compliance unit-generating Off-Site GSI Project could lead to noncompliance. Ongoing O&M is of particular concern for the System, as many of the anticipated compliance unit-generating projects are required to be operated and maintained on a long-term, ongoing basis.

7.1.3 Cost and Demand Uncertainty

Off-Site GSI Project construction and maintenance costs are used to set compliance purchase prices and ongoing O&M fees. These costs can vary widely and change from year to year, and there is risk of buyer shock if compliance purchase costs or O&M fees change drastically in a short time period. The number of participants in the RAC System and the magnitude of compliance units exchanged is difficult to predict as described in Section 6.2.

7.2 Managing Uncertainty

The Contra Costa County RAC System utilizes several mechanisms to manage identified risk and uncertainty that may affect Permittees, compliance unit providers, and environmental outcomes.

7.2.1 Runoff Equivalency – Rainfall Ratio

The Contra Costa County RAC System would require a rainfall equivalency factor (i.e., Rainfall Ratio) to be applied to the Regulated Project Runoff Generating Acres for exchanges of Equivalent Acres Greened compliance units generated in other Rainfall bands across the County (see Section 4.2.3.1). The Rainfall Ratio would account for variability in precipitation across Contra Costa County and provide the demonstration of "equivalent volume" required under Provision C.3.e.(2).

7.2.2 Pollutant Load Equivalency – Pollutant Ratio

A portion of the uncertainty surrounding the equivalency of pollutant loading between a Regulated Project and an Off-Site GSI Project is anticipated to be addressed through the RAC System's Rainfall Ratio, which accounts for runoff volume generation differences. To account for pollutant loading differences between land use types, a comparison of average concentrations of PCBs and TSS (as surrogate for urban pollutants of concern) was conducted as described in Section 4.2.3.2. As PCBs are a legacy pollutant, new and re-development projects are anticipated to always produce lower concentrations than older urban areas. Based on the TSS analysis, there was no statistical difference in loading between commercial, residential, and institutional land use classifications; however, transportation and industrial land uses would be expected to produce higher levels of TSS and potentially other adsorbed pollutants. Therefore, any new or re-development projects that are proposed to have these land use types would require a higher Pollutant Ratio to apply to the Equivalent Acres Greened compliance units exchanged to provide the pollutant load capture equivalency demonstration required by MRP Provision C.3.e.i.

While treatment through control measures could be expected to be variable, any variability in the outcomes of the treatment control measures used for Off-Site GSI Projects is expected to occur at the same rate as those used for on-site Regulated projects.

7.2.3 Contractual Mechanisms

Traditional contracting mechanisms obligate payment based on the completion of a scope of work that is intended to provide desired outcomes. However, this approach still burdens buyers with the risk of underperformance of the desired outcomes. The mechanism used to contract the compliance unit providers, whether a pay-for-performance or CBP3 approach, is intended to reduce the occurrence of underperformance (e.g., project failure, inadequate LID/GSI implementation) by shifting the financial burden of underperformance from buyer to the provider of the service (in this case, the compliance unit provider).

7.2.3.1 Project Failure

Participants in the Contra Costa County RAC System would be required to agree to contractual provisions intended to provide assurances for performance of control measures, account for unseen conditions, and provide remedies for deficiencies. This may include financial assurances,

such as performance bonds. The contracts for compliance unit providers participating in the RAC System can be structured on pay-for-performance or CBP3 principles for larger-scale implementation. These contracts would require financial compensation to be tied to performance outcomes, such as the design, implementation, and O&M (if conducted by a private entity) of Off-Site GSI Projects. A pay-for-performance or CBP3 approach for the Contra Costa County RAC System may mitigate Off-Site GSI Project implementation or performance risk, while providing an incentive for compliance unit providers to provide cost-effective compliance units. Payments from CCCWP would be tied to milestones, including the successful certification of a properly-designed and implemented project. In addition, contracts would be expected to obligate compliance unit providers with the financial responsibility of addressing project failures. Compliance unit providers would be responsible for addressing failures revealed during certification and ongoing verification of O&M within a specified grace period. Some compliance units may be exchanged before the compliance unit-generating Off-Site GSI Project is constructed; however, the RAC System Administrator or local jurisdiction would only approve such pre-construction exchanges when there is high certainty that the Off-Site GSI Project would be constructed.

If private entities are identified as responsible for ongoing O&M and/or verification under a pay-for-performance or CBP3 approach, they would be similarly required to demonstrate proof of O&M conducted and adequate performance of Off-Site GSI Projects prior to receiving payment through the Countywide Maintenance District. Jurisdictions who conduct O&M for Off-Site GSI Projects would similarly need to demonstrate proof of O&M prior to receiving funds from the Countywide Maintenance District.

7.2.3.2 Unaddressed Catastrophic Project Failure

In the rare instance that a project failure is not addressed by a compliance unit provider within the specified grace period, contract provisions are expected to require financial compensation from the compliance unit provider for the Contra Costa County RAC System to provide MRP Permittees compliance units from another source. During Phases 1 and 2, the CCCWP RAC Subcommittee and/or Administrator would be responsible for locating and attaining Equivalent Acres Greened compliance units to replace defaulted compliance units. In future iterations of the RAC System, a supply of reserve compliance units may be obtained through a reserve pool of compliance units set aside and pooled from MRP Permittees.

7.2.3.3 Assurances for Compliance Unit Providers

Contractual provisions are also expected to provide assurances to compliance unit providers that certified Off-Site GSI Projects would not be subject to modifications to the Contra Costa County RAC System that occur after the establishment of the contract. This would pertain directly to changes to exchange ratios and/or calculation methods for compliance units and certification requirements. These types of contractual provisions are intended to reduce uncertainty and risk for compliance unit providers during their financial planning and decision-making process for Off-Site GSI Projects.

7.2.4 Cost and Demand Uncertainty

The RAC System would average Off-Site GSI Project implementation costs across the RAC System to mitigate design and construction cost variability and allow equitable sale of

compliance units. Additionally, increases in Equivalent Acre Greened unit costs would be allowed on an ongoing basis. Similarly, the RAC Administrator will conduct regular examination of the sufficiency of O&M fees and may increase these fees as needed to cover costs.

Market demand is subject to many factors. The RAC System has been designed such that larger-scale regional stormwater capture facilities could be implemented and generate compliance units for exchange. As larger scale facilities have been demonstrated to be more cost effective than smaller scale facilities, it is expected that RAC System participants would realize cost savings for their compliance needs. Compliance cost savings are likely to encourage demand.

8. ADAPTIVE MANAGEMENT

Section 8 describes adaptive management procedures for the Contra Costa County RAC System, and Sections 8.2 and 8.3 describe the responsibilities for adaptive management for timing and **oversight by entities**. This section refers to adaptive management processes that would occur following approval of the Contra Costa County RAC System through a permit amendment or other process, which would allow for the initiation of Phase 2 of the RAC System under MRP 3.

8.1 Scaling the Contra Costa County RAC System

Although Phase 2 of the Contra Costa County RAC System has a defined scope for its participants, compliance units, and jurisdiction, the RAC System was envisioned to provide a framework that would allow entities across the Bay Area to meet water quality goals while generating economic opportunities. Scaling the Contra Costa County RAC System to encompass more objectives and participation, or to allow for exchanges with other Countywide regional alternative compliance systems, could create opportunities for economies of scales and incentivize nonregulatory-based interests, such as environmental justice. This section provides considerations for scaling the Contra Costa County RAC System beyond Phase 2.

8.1.1 Scaling for Additional Compliance Units and Control Measures

It is anticipated that, after Phase 2 of the Contra Costa County RAC System, more control measures and associated compliance units could be integrated to address MRP provisions and other community needs.

8.1.1.1 Provision C.3.g. Hydromodification Management

Permittees with Regulated Projects subject to MRP Provision C.3.g. hydromodification management requirements may participate in the Contra Costa County RAC System to address Provision C.3.b. (LID/GSI requirements) for their Regulated Project off-site provided that their hydromodification control requirements are met on-site. As addressing water quality treatment and hydromodification control in the same on-site facility would be expected to be more cost-effective, it is not expected that many Regulated Projects would use this option. The Contra Costa County RAC System could be updated in the future to incorporate a separate Permittee hydromodification management track for a new hydromodification management compliance unit, if there is substantial interest.

The Permittee hydromodification management track would include a separate suite of hydromodification management facilities developed to ensure that impacts to soft-bottomed receiving waters directly downstream of Regulated Projects are adequately mitigated. These projects could potentially include regional hydromodification controls and/or in-stream measures as defined in MRP Provision C.3.g.iv. The impact to the direct receiving waters of Regulated Projects would necessitate a compliance unit that takes into account flow control mitigation that is based on the amount of impervious surface mitigated and geographically-specific to address the direct receiving waters. This hydromodification compliance unit would have to consider the relative location of Regulated Projects and Off-Site GSI Projects and would involve specific boundary restrictions on exchanges based on sub-watersheds.

Participating Regulated Projects seeking C.3.g hydromodification management compliance would participate in the Contra Costa County RAC System through payment of an exchange-specific hydromodification management compliance payment that would be added to the overall compliance purchase, along with a parcel-specific hydromodification management ongoing O&M fee, which would be added to the ongoing O&M fee.

8.1.1.2 Net Environmental Benefit

As described, during Phases 1 and 2, the funds collected for the NEB Ratio would be directed towards additional Equivalent Acres Greened compliance units. The additional Equivalent Acres Greened compliance units associated with the NEB Ratio for each exchange would provide a net increase in impervious surface treated and/or a net reduction in pollutant load.

Following the Phase 2 of the Contra Costa County RAC System, the NEB Ratio could be directed towards an expanded list of water quality projects and programs beyond additional Equivalent Acres Greened, in response to changing water quality objectives. These would be considered as part of the Contra Costa County RAC System adaptive management procedures described in Section 8.3.

8.1.2 Tracking and Incentivizing Ancillary Benefits

The LID/GSI and pollutant control measures implemented through the Contra Costa County RAC System may generate valuable co-benefits for Contra Costa County communities that are unrelated to provisions of the MRP, such as climate resiliency, localized flooding reduction, and environmental justice for disadvantaged communities. The objectives of the Contra Costa County RAC System could be expanded in the future beyond alternative compliance and include the incentivization of these types of ecosystem services and social benefits for Contra Costa County communities.

Incentivization of co-benefits could be accomplished by creating compliance units for each ancillary benefit and/or identifying disadvantaged communities and incorporating discounting factors into the CCCWP RAC Subcommittee's selection criteria for Off-Site GSI Projects. Compliance unit providers could be incentivized to generate ancillary benefits through discount factors applied to Equivalent Acres Greened compliance unit-generating projects (e.g., through the WQB Ratio) that meet a minimum threshold for ancillary benefits and/or are located in designated disadvantaged communities. There may also be opportunities to maximize ancillary benefits through use of a CBP3 approach, see Section 6.6.

8.1.3 Scaling for Additional Participation

Although the Contra Costa County RAC System is envisioned to provide alternative compliance for Regulated Projects, there are several public and private entities in the Bay Area with overlapping interests and water quality goals that would benefit from participation in the RAC System.

8.1.3.1 Additional Buyers

During Phase 2, the primary source of funding for the Contra Costa County RAC System Off-Site GSI Projects would be compliance purchase payments collected from Permittees and private developers of Regulated Projects participating in the RAC System. The RAC System could incorporate ancillary funding from sources invested in water quality improvements in the Bay

Area, including Caltrans, Phase II MS4 permitted entities, IGP or individual NPDES Permittees, POTWs interested in TMDL reductions, or conservation groups interested in "retiring" (i.e., purchasing for non-compliance related water quality benefit) compliance units.

After or during Phase 2, it is recommended that the CCCWP RAC Subcommittee conduct a preliminary investigation into the interest and demand from other NDPES-regulated entities. If demand exists from other entities to participate in the Contra Costa County RAC System, the CCCWP RAC Subcommittee could identify amendments to the Contra Costa County RAC System framework and Off-Site GSI Project selection criteria that could widen the scope of potential buyers of compliance units generated from Off-Site GSI Projects.

For example, if demand exists from IGP Permittees, the CCCWP RAC Subcommittee could identify revisions to the certification process such that compliance units generated in the system could be used by both developers and IGP Permittees. An expansion of System buyers to other NPDES-permitted entities may require review and approval by the Water Board, the State Water Resources Control Board, EPA, and/or other regulators.

The Subcommittee could also consider creating a simple cost structure for other entities, as streamlining the funding process has been a heavily echoed sentiment from current MRP Permittees and a likely request from other entities.

8.1.3.2 Additional Compliance Unit Generators

The anticipated compliance unit providers during the Phase 2 of the Contra Costa County RAC System are municipalities and private entrepreneurial entities with experience developing LID/GSI in the urban landscape. As the Contra Costa County RAC System expands, it is anticipated that other public entities or non-governmental organization with similar water quality objectives could participate in generating cost-effective compliance units through economies of scale with large mitigation projects. In the Bay Area, this could potentially include Caltrans Trash/POC mitigation projects, source control programs, stream restoration projects led by non-governmental organizations, or other similar water quality improvement projects or programs.

8.1.4 Scaling for a Regional Inter-County Program

One of the priorities envisioned for the Contra Costa County RAC System following Phase 2 is exploring how to expand the RAC System to include additional Permittees, outside of Contra Costa County, subject to the MRP requirements and the PCBs and mercury TMDLs, across the Bay Area. Scaling the Contra Costa County RAC System to a larger regional inter-county program may require:

- Coordination and agreement between counties to ensure uniform adoption of the Contra Costa County RAC System framework;
- Approval from regulators;
- Clear roles for collecting and dispersing compliance purchase payments and ongoing O&M fees; certification, verification, and tracking of compliance units; and, if possible, identification of centralized entities that may be able provide these services across jurisdictions;

- Inclusion of inter-county stakeholders in Contra Costa County RAC System RAC Subcommittee;
- Consensus on how Permittees may claim pollutant load reductions generated by Off-Site GSI Projects in other jurisdictions for Regulated Projects within their jurisdiction and vice versa;
- Refinement or expansion of Rainfall Ratio to account for precipitation rainfall across the Bay Area;
- Considerations for pollutants of concern hot spots in an inter-county context; and/or
- Updates to the tracking system to incorporate new counties and avoidance of issues such as double-counting.

8.1.5 Scaling for Other Considerations

As participation grows, the Contra Costa County RAC System may consider leveraging a larger number of Off-Site GSI Projects across the System to mitigate the risk of catastrophic project failure. This could be accomplished in future iterations with a reserve pool of compliance units, which is often implemented through a reserve ratio applied to the buyer. For example, a reserve ratio of 1.1:1 would require 10% of purchased Equivalent Acres Greened to be set aside for a reserve pool that would be used to mitigate any catastrophic project failures in the System.

8.2 Ongoing System Decision Points

Regular review and revision of the Contra Costa County RAC System Off-Site GSI Projects and the technical aspects of the Contra Costa County RAC System is anticipated. These ongoing decision points would be the responsibility of the CCCWP RAC Subcommittee and System Administrator.

8.2.1 Selection Criteria for Off-Site GSI Projects

Off-Site GSI Projects generating the compliance units to meet the initial projected demand could be constructed as part of the same contract through a pay-for-performance or CBP3 contracting model. If a larger regional contract to implement Off-Site GSI Projects is pursued, one primary function of the CCCWP RAC Subcommittee would include developing criteria for Off-Site GSI Project selection, reviewing applications, and approving Off-Site GSI Project for compliance unit generation for the contract. Criteria for selection may include but not be limited to: confirmation the Off-Site GSI Project meets baseline requirements, TMDL load reduction potential, multi-benefits provided, geographic location, and/or costs.

8.2.2 Technical Review

The CCCWP RAC Subcommittee and/or their appointed technical reviewers would be responsible for providing regular review on the technical aspects of the Contra Costa County RAC System and proposing updates to the RAC System framework, as necessary. This may include, but not be limited to, regular review and revision of:

- Approved control measures and quantification methodologies for associated generated compliance units;

- Precipitation and land use classification data;
- System Ratios, including the Rainfall Ratio, Pollutant Ratio, WQB Ratio, or other ratios that may be incorporated;
- Equivalent Acres Greened compliance unit calculation; and/or
- Key System Tracking Tool capabilities.

Other control measures not included in section 5.3 could be used to generate Equivalent Acres Greened compliance units, if compliance unit providers wishing to use them can demonstrate that the facilities are designed consistent with the C.3 Guidebook requirements (CCCWP, 2017) and provide equivalent volume capture and pollutant load reduction performance as the facility types listed. It is envisioned that Phase 2 of the Contra Costa County RAC System would limit allowable control measures to LID/GSI facilities only. Non-LID/GSI facility types could potentially be considered in the future, through the Contra Costa County RAC System adaptive management protocol outlined in Section 8.3.2.

8.3 Procedures for System Changes

As the Contra Costa County RAC System evolves and expands, there could be interest in incorporating new pollutants of concern, benefits, participants, and jurisdictions into the System framework. Changes related to the System framework would involve the CCCWP RAC Subcommittee, identified technical advisors, the Flood Control District, contracted entities, and/or others involved in System administration, and incorporate stakeholder recommendations. Preliminarily, it is expected that minor programmatic changes to the Contra Costa County RAC System would be updated in RAC System Documents but would not require policy related changes. However, any changes to the RAC System that could affect water quality outcomes would require an amendment to the MRP. These major changes would entail completion of the formal permit amendment process required by the Water Board. RAC System changes would be expected to be reported through the required RAC System reporting processes.

8.3.1 Process for RAC System Changes

The Contra Costa County RAC System is expected to be reviewed regularly. RAC System changes would be completed on an as-needed basis and would involve the following process:

- **Draft RAC System Priorities** - The CCCWP RAC Subcommittee would be responsible for identifying areas for change in the Contra Costa County RAC System framework. The RAC System Priorities process would summarize the status of the RAC System, identify changes, and whether proposed changes would require completion of a formal permit amendment process.
- **Stakeholder Feedback**– The CCCWP RAC Subcommittee would be responsible for sharing the RAC System priorities, with any identified technical advisors as well as the public to collect feedback. This process is envisioned to be separate from a formal public input process that may occur as part of a permit amendment.
- **Technical Recommendations** - Technical aspects of the Contra Costa County RAC System framework would be reviewed on an as-needed basis by the CCCWP RAC

Subcommittee and/or technical advisors. These components may be reviewed based on outcomes observed by the RAC System Administrator and CCCWP RAC Subcommittee, or may be reviewed per a request from the Water Board following formal reporting procedures. Recommendations for changes would be developed prior to a regularly scheduled RAC System Strategy Meeting. Technical recommendations would only be applied to future exchanges; they would not affect exchanges already completed or in progress (i.e., it is anticipated that all completed exchanges would be "grandfathered" under the RAC System). Technical aspects that may be reviewed include:

  - Precipitation and equivalent stormwater runoff across locations
  - Land use classification and equivalent pollutant loading across locations
  - Ratios pertaining to equivalency, uncertainty, and (potentially) reserve ratios
  - Compliance purchase compliance unit calculation
  - Allowable control measures
  - Integrating a market-based approach to determine cost per Equivalent Acres Greened

- **RAC System Strategy Meeting** – The CCCWP RAC Subcommittee and technical advisors would convene on a regular basis to share stakeholder feedback and recommendations pertaining to the RAC System framework and draft system priorities prior to completing RAC System changes.
- **RAC System Changes and Public Notification** - The CCCWP System Administrator would amend the RAC System Framework with the approved list of recommended RAC System amendments. The RAC System Administrator will publish notices of any substantial amendments made to the RAC System to participants and the general public.
- **Permit Reissuance Cycles and Permit Amendments –** Substantial structural changes to the RAC System may require changes to permit language for the RAC System option. Permit language changes, if identified, are anticipated to occur during permit reissuance cycles; however, there is a possibility that future permit amendments may be needed.

8.3.2 Changes to Preapproved List of Control Measures

Potential compliance unit providers interested in generating Equivalent Acres Greened compliance units would be encouraged to design projects using control measures from the preapproved list of control measures (Section 4.2.1.2). Changes to allowable control measure types that are not accepted in the current MRP and/or future issuances would be expected to result in a formal permit amendment process.

8.4 Funding and Financing Considerations

8.4.1 Financing of Off-Site GSI Projects

Adaptive management of the implementation of the Off-Site GSI Projects would be required at the project level and programmatically. For each Off-Site GSI Project, the project design and implementation plan would be required to address elements of risk, uncertainty, and the dynamic

nature of these GSI projects to optimize performance. This also may include financial assurances (e.g., performance bonds) and adaptive management criteria. Adaptive management is likely to be particularly important for Off-Site GSI Projects implemented through a pay-for-performance or CBP3 contracting model with compliance unit providers, financed upfront through public or private financing opportunities.

8.4.2 Compliance Purchase Amount Review and Adjustment

At the programmatic level, the RAC System Fund may be evaluated regularly by the CCCWP System Administrator to address the annual inflation rate, market conditions, changes in the regulatory environment, new procurement strategies, and construction and project stewardship costs. If the implementation costs for the Contra Costa County RAC System exceed compliance purchase revenue, then the CCCWP System Administrator may adjust the compliance purchase components upward to address the documented deficiencies. Following Phase 2 of the Contra Costa County RAC System, the funding and financing for the RAC System would be expected to change as the RAC System evolves.

The Contra Costa County RAC System would include a process to regularly evaluate the sufficiency of the compliance purchase amounts, particularly the Equivalent Acre Greened unit cost and the administrative payment, and to adjust the compliance purchase components as needed. The CCCWP System Administrator would regularly evaluate how Off-Site GSI Project implementation costs align with the Equivalent Acre Greened unit cost ($Cost_{EAG}$) and could make associated needed adjustments. This could be based on the RAC System regular reporting process.

Adaptive management procedures for the ongoing O&M fees would be defined in updates to the Flood Control District Expenditure Policy, the O&M fee Operational Procedures; and the O&M fee Operational Plan, developed as part of the establishment and approval of the ongoing O&M fee.

Some programs note that cumbersome processes discourage them from adjusting prices as frequently as may be desirable. Others have reported that they have standard practices in place for regular—often annual—evaluation of whether the payments collected are enough to cover project and administrative costs. Programs that have flexibility to update their required payment amounts without lengthy approval or amendment processes may be better equipped to update the payment amounts as needed.

9. OVERVIEW OF TRACKING TOOL

Section 9 describes **the accounting and reporting system,** required for proposed program submittal per MRP 3 Fact Sheet.

9.1 Contra Costa County RAC System Components Tracked

A RAC System Tracking Tool is being developed for the Contra Costa County RAC System by SFEI. The RAC System Tracking Tool will include a comprehensive database to track components of the RAC System and relate RAC System components to existing tracking tools. The components tracked will include:

- Off-Site GSI Project identification; location (i.e., geospatial information); drainage area and imperviousness; rainfall zone; tributary land uses; control measure type; and calculated compliance units.
    - Off-Site GSI Project certification, including confirmation of appropriate control measure type and sizing; and links to relevant forms completed by certifying entities.
    - On-going GSI Project verification, including the results of regular inspections and links to relevant forms completed by certifying entities.
    - Compliance units, including: Off-Site GSI Project generating units; rainfall zone; and tributary land use.
    - Off-Site GSI Project ledger, tracking the number of compliance units sold and associated exchange identification numbers (see below); and the remaining compliance units available for purchase.
- Regulated Project information, linked from the County's existing AGOL tool.
- Exchange Information, including: an exchange identification number; the number of compliance units required for purchase by a Regulated Project, calculated using Equation 4-8 in Section 4 of this document; or the number of compliance units desired for purchase by another buyer; the identified compliance units for purchase with associated attributes; the compliance purchase payment amount, including applicable administrative payments associated with the jurisdictions in which the Off-Site Project and/or buyer are located in, along with the System administrator; the ongoing O&M fee identification; links to relevant agreements signed by the Regulated Project and/or other buyer, and confirmation that the compliance purchase has been paid.
- O&M fee tracking, potentially linked to the Flood Control District's tax tracking system.

Other Contra Costa County RAC System information that will be tracked at the administrative level include signed agreements from participants, contracts with CBP3 developers or others implementing Off-Site GSI Projects, System rules and requirements, and summaries of regular meetings and resulting amendments/addendums to System rules and requirements.

Section 10 and Appendix C include additional information on templates that will be completed for the Contra Costa County RAC System and include details of the data collected and tracked in the System Tracking Tool.

9.2 Accounting System

The RAC System Tracking Tool will include an accounting system that provides tracking of generated compliance units, compliance purchase amounts, and whether and when payments were made. Generated compliance units will be populated in the RAC System Tracking Tool associated with the Off-Site GSI Projects, and a linked ledger will track "sold" compliance units and available compliance units. It is expected that financial tracking will be conducted by individual jurisdictions collecting and/or transferring compliance purchase payments, but the System Tracking Tool will include tracking of whether and when the payment was made. It is expected that O&M fee financial tracking will be managed by the O&M fee Administrator and/or the Flood Control District.

9.3 Reporting System

Template documents will be used to document Off-Site GSI Project certification, verification, and individual exchanges. This information will be available as completed forms linked within the System Tracking Tool, as well as in the System Tracking Tool database, as described in Section 9.1. Reporting will be completed by the System Administrator in accordance with the requirements of the Water Board and MRP 3. Information regarding implemented Off-Site GSI Projects, certification, verification, exchanges, and ongoing O&M will be readily available in the System Tracking Tool. It is anticipated that this data would be extracted for annual reports using a defined process based on the established reporting requirements.

10. CONTRA COSTA COUNTY RAC SYSTEM TEMPLATE DOCUMENTS

10.1 Approach to Development of RAC System Templates

The System templates and forms were designed to build on existing processes, forms, and tracking systems where possible. The CCCWP has developed a number of standard templates and forms for Regulated Project design review, construction inspection, and O&M verification that were incorporated into the documents for RAC System certification, verification, and tracking.

System templates/forms need to document all aspects of the RAC System, including:

- The Regulated Project's use of the alternative (off-site) compliance option;
- The Off-Site GSI Project, including:
  - Facility attributes;
  - Design review, construction inspection, and certification;
  - Ongoing O&M (including O&M Plan and Agreement) and O&M verification;
- Exchange details, including total compliance units and equivalency; and
- Necessary agreements and/or resolutions among participants in the RAC System.

The RAC System templates/forms need to interface with the RAC System Tracking Tool, described in Section 9. Some of the forms will be used to input data directly into the Tracking Tool, and some of the templates/forms will be uploaded as documents for storage in the Tracking Tool. Development of the RAC System templates/forms requires close coordination with the design and development of the Tracking Tool to ensure an integrated approach.

The following sections describe the existing and newly developed forms to be used to document the various aspects of the System.

10.2 Regulated Project Documentation

10.2.1 Stormwater Control Plan

CCCWP Permittees currently require that a Regulated Project applicant submit a Stormwater Control Plan describing the project and site characteristics, the selection and sizing of required site design, source control, stormwater treatment measures, and operation and maintenance of treatment measures. For this purpose, Permittees have used or adapted the existing CCCWP Stormwater Control Plan template.[22]

As part of development of RAC System templates, the existing Stormwater Control Plan template has been modified to include sections to document the applicant's choice of alternative

[22] Existing CCCWP templates and forms can be found on the CCCWP website: https://www.cccleanwater.org/development-infrastructure/development

compliance (in lieu of some or all onsite treatment) and to require submittal of the Off-Site GSI Project Data Form (Section 10.3.1) and the Alternative Compliance Exchange Documentation Form (see Section 10.4). These two forms, available from the System Tracking Tool, will document an authorized exchange and payment of compliance purchases and will allow the reviewing agency to confirm compliance with MRP Provision C.3. The modified Stormwater Control Plan is provided in Appendix C-11.

For Regulated Projects selecting alternative compliance, applicants would use the revised Stormwater Control Plan to provide project data, identify required source controls, and incorporate site design measures where feasible.

10.2.2 Regulated Project Tracking in AGOL

Contra Costa Permittees currently use the AGOL Application, "C3 Project Tracking and Load Reduction Tool" to track completed Regulated Projects and associated stormwater treatment measures in order to calculate estimated PCBs and mercury load reductions resulting from these projects. For Regulated Projects selecting alternative compliance, project attributes would continue to be entered into AGOL per the current procedure. The use of the System would be entered under the "Alternative Compliance Measures" field in AGOL, which would link to information about the Off-Site GSI Project, which would have also been entered into AGOL when completed and certified via the Off-Site GSI Project ID.

10.3 Off-Site GSI Project Forms

This section reviews the forms required to describe, certify, and verify the Off-Site GSI Project/s and provide documentation in the RAC System Tracking Tool. These forms include a number of existing forms currently used by Contra Costa Permittees as well as three new forms specific to implementing the System.

10.3.1 Pre-Construction Off-Site GSI Project Data and Design Certification Form

The Pre-Construction Off-Site GSI Project Data and Design Certification Form (Appendix C-3) is a new form that will only be used for Off-Site GSI Projects that are approved by the RAC System Administrator and/or local jurisdiction to exchange compliance units prior to final construction. This form contains the attributes of the Off-Site GSI Project that will be entered into the Tracking Tool. This form will be completed after review and approval of the Off-Site GSI Project to generate compliance units. It will also be used to summarize the design review and approval processes completed by the Certifying Entity. It includes sign-offs by Certifying Entity staff on design review. For these Off-Site GSI Projects, the Off-Site GSI Project Data Form (Appendix C-4) and the Off-Site GSI Project Post-Construction Certification Form (Appendix C-5) must be updated and submitted once construction is completed, no later than three years after initial exchange of compliance units.

Off-Site GSI Projects that are not approved for compliance unit exchange prior to construction do not need to complete the Pre-Construction Off-Site GSI Project Data and Design Certification Form (Appendix C-3), and will instead just complete the Off-Site GSI Project Data Form (Appendix C-4) and the Off-Site GSI Project Post-Construction Certification Form (Appendix C-5).

10.3.2 Off-Site GSI Project Data Form

The Off-Site GSI Project Data Form (Appendix C-4) is a new form containing the attributes of the Off-Site GSI Project that will be entered into the Tracking Tool. This form will be completed after review and approval of the Off-Site GSI Project to generate compliance units. If review and approval occurs prior to certification, the form will be updated when certification occurs post-construction. Attributes to be entered into the form (and subsequently the Tracking Tool) include: facility ID number; facility type and location; Drainage Area size(s), location(s), and land use(s); total impervious and pervious surface within the Drainage Area(s); total greened acres; facility owner; and optionally, project cost; and associated multiple benefits.

10.3.3 Off-Site GSI Project Post-Construction Certification Form

The Off-Site GSI Project Post-Construction Certification Form (Appendix C-5) is a new form that will be used to summarize the design and construction review and approval processes completed by the Certifying Entity. It includes sign-offs by Certifying Entity staff on design review and construction inspections, as well as verification of a complete and acceptable O&M Plan and, as appropriate, an O&M Agreement. It also helps organize the multiple documents that are currently used by Contra Costa Permittees to (1) conduct inspections of stormwater treatment facilities during and at completion of construction, and (2) fulfill MRP requirements for ensuring facilities will be properly maintained for the life of the project by a responsible party. These existing documents include:

- Stormwater Treatment Facilities Construction Inspection Checklist (Appendix C-6)
- Stormwater Facilities O&M Plan Template (Appendix C-7)
- Stormwater Management Facilities O&M Agreement Template (Appendix C-8)

These three documents also need to be prepared for the Off-Site GSI Project and uploaded to the Tracking Tool to complete the certification process. There will likely be multiple Construction Inspection Checklists, since inspections are conducted during different phases of construction of the Off-Site GSI Project, as well as at completion of construction.

10.3.4 Off-Site GSI Project O&M Verification Form

The Off-Site GSI Project O&M Verification Form (Appendix C-10) is another new summary form that documents that: 1) O&M of the Off-Site GSI Project was performed; 2) O&M verification inspections were conducted (by whom and when); and 3) any maintenance deficiencies found were corrected. It relies on the use of the existing Stormwater Facility O&M Inspection Report (Appendix C-9) for documentation of the O&M verification inspections. The O&M Verification Form is intended to be completed once the O&M verification inspection(s) have been completed by the Verifying Entity. If deficiencies in maintenance are found, there may need to be one or more additional inspections performed to ensure that deficiencies have been corrected before the O&M Verification Form can be completed and uploaded into the Tracking Tool.

Note that the O&M Verification Form is required to be uploaded to the Tracking Tool as proof of ongoing Off-Site GSI Project verification. However, the Stormwater Facility O&M Inspection

Report forms are to be retained by the Verifying Entity and the inspection data from the forms entered into the Verifying Entity's local O&M inspection database.

10.4 Exchange Documentation

An "Alternative Compliance Exchange Documentation Form" (Appendix C-10) was developed to document each individual exchange transaction that takes place in the Contra Costa County RAC System and confirm that: (1) the required compliance purchases were paid; and (2) the exchange was reported to the O&M fee Administrator so that the required annual O&M fees can be added to the regulated parcel's property tax fees. An individual exchange transaction is defined as the payment of compliance purchases and annual O&M fees by the owner of the Regulated Project (i.e., the buyer) in exchange for a specified quantity of Equivalent Acres Greened produced by one Off-Site GSI Project (i.e., the seller). Each individual exchange transaction is assigned a unique Exchange ID.

The Alternative Compliance Exchange Documentation Form provides the details of the exchange, including calculation of the quantity of Equivalent Acres Greened that a Regulated Project needs to purchase for compliance purposes, the amount of Equivalent Acres Greened that the Regulated Project is purchasing from a specific Off-Site GSI Project with this exchange, and calculation of the compliance purchase amounts and annual O&M fees associated with the amount of Equivalent Acres Greened purchased via this exchange. The Form also provides confirmation that the compliance purchase was paid in full and that the information on annual O&M fees was provided to the O&M fee Administrator to allow for ongoing fees for the Regulated Project's parcel. If a Regulated Project is purchasing Equivalent Acres Greened from more than one Off-Site GSI Project, a separate Form is completed for each exchange. Each Form is uploaded to the Tracking Tool and linked to the appropriate Off-Site GSI Project via the Facility ID. The Regulated Project associated with each Exchange ID is identified with the same Regulated Project ID that is used in the County's AGOL system.

10.5 Participant MOU and Stormwater Ordinance Language and Participant MOU

Example stormwater ordinance language and an example agreement or MOU are provided in Appendix C. Jurisdictions would be expected to update their Stormwater Ordinances to include the Contra Costa County RAC System as a compliance option for Regulated Projects. Model Stormwater Ordinance language to include the RAC System is provided in Appendix C-1. Note that this is expected to be updated following Water Board approval of the final Contra Costa County RAC System . In addition to updating their Stormwater Ordinances, Permittees would be required to complete the agreement to participate in the RAC System, to allow Off-Site GSI Projects to be located within their jurisdictions, and to allow Regulated Projects within their jurisdictions to participate in the RAC System. It is expected that the example MOU provided in Appendix C-2 may be updated for consistency with the Contra Costa County RAC System permit amendment or other Water Board approval documentation and will be further reviewed by City attorneys before being finalized for Phase 2 of the RAC System.

11. CONTRA COSTA COUNTY RAC SYSTEM NEXT STEPS

Section 11 describes Contra Costa County RAC System **expectations for timing**.

This RAC System Summary Report primarily describes the proposed Contra Costa County RAC System structure that is envisioned to be implemented during Phase 2 (i.e., initial System roll-out). Prior to initiating Phase 2 and following completion of this System Summary Report, one to two Phase 1 pilot exchanges will be conducted to test key components of the proposed Contra Costa County RAC System structure. Any lessons learned during the Phase 1 pilot exchanges will be applied to this System Summary Report to create the Final Program Documents used to guide Phase 2 of the Contra Costa County RAC System. Phase 2 will be launched after Water Board approval of the RAC System as an option under Provision C.3.e through a permit amendment or other mechanism.

During the Contra Costa County RAC System launch and initial implementation as part of Phase 2, the CCCWP RAC Subcommittee and System Administrator will use the adaptive management procedures described in Section 8 to amend the Final Program Documents to address lessons learned. After this Contra Costa County RAC System establishment period and implementation of required System adjustments and amendments, the System will shift into Phase 3, during which the System will be fully operational. At this phase, it is expected that adaptive management adjustments will be minimal and based primarily on forces external to the RAC System, such as market and regulatory changes.

A proposed schedule for Contra Costa County RAC System implementation and launch following completion of this RAC System Summary Report is provided in Table 9. Key administrative entities responsible for the next steps listed are identified. The time frames included in the table are subject to change depending on lessons learned during Phase 1 or Phase 2. Based on this anticipated schedule, the Contra Costa County RAC System will be fully established and operational (i.e., in Phase 3 of development) by 2029 to 2030.

Table 9: Contra Costa County RAC System Implementation Phases Schedule

Stage	Who	Steps	Anticipated Time Period
Phase 1 (Pilot Exchanges)	Project Steering Committee and Project Consultant Team	1. Identify Equivalent Acres Greened compliance units. 2. Identify buyer(s). 3. Calculate compliance units and compliance purchase amount for pilot exchange. 4. Develop MOUs. 5. Perform Certification and Tracking. 6. Pilot Template Documents. 7. Report Lessons Learned.	2022–2023

Stage	Who	Steps	Anticipated Time Period
Phase 2 (Initial System Roll-Out)	CCCWP System Administrator	1. Prepare MRP amendment submittal. 2. Update CCCWP MOU or establish other agreement for permittee participants. 3. Establish CCCWP administrator, subcommittee(s), meeting scheduling, and other administrative structural needs. 4. Establish financial transaction processes. 5. Identify project implementation strategy (e.g., financing for larger-scale implementation through CBP3 or other process). 6. Conduct cost study to set the Equivalent Acre Greened unit cost portion of the Phase 2 compliance purchase. 7. (As applicable) Identify compliance unit generator contractor(s).	2022-2026
	O&M Fee Administrator	1. Establish O&M fee mechanism (proposed to be a Community Facilities District). 2. Establish O&M Fund. 3. Develop and implement Operational Procedures that describe how the O&M fees are levied, managed, and distributed through the identified mechanism and/or other administrative funds and processes. 4. Conduct cost study to set Phase 2 ongoing O&M fee rate schedule or per unit amount.	2023-2026
	Permittees	1. Perform CEQA evaluation. 2. Update Stormwater Ordinance (see Appendix C) 3. Develop administrative payment and payment transfer. processes and other financial processes. 4. Sign agreement with CCCWP Administrator. 5. Receive training and/or instructions for RAC System implementation.	2023-2025
	All entities	1. Launch System (including outreach). 2. Conduct minor ongoing adaptive management.	2025-2027
Phase 3 and beyond (Established and Fully Operational System)	CCCWP Regional Alternative Compliance Subcommittee	1. Evaluate Phase 2 of System (see Section 8). 2. Submit supplemental information as part of MRP 3 Report of Waste Discharge or MRP 4 permit reissuance process. 3. Identify needed internal RAC System changes based on results of evaluation. 4. Adjust Equivalent Acre Greened unit cost portion of the compliance purchase as needed. 5. Consider outreach or other expansion needs. 6. Conduct ongoing adaptive management processes.	2028-2029
	CCCWP Administrator	1. Amend System as needed (see Section 8). 2. Conduct outreach relating to System expansion needs. 3. Implement ongoing adaptive management needs.	2028-2030
	O&M Fee Administrator	1. Adjust ongoing O&M fee amount as needed.	2028-2029

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GLOSSARY

Alternative Compliance Systems: Flexible compliance programs that allow regulated dischargers with costly or infeasible pollution control requirements to meet equivalent discharge reductions by investing in the implementation of cost-effective and feasible controls at other source locations, thereby achieving an overall environmental benefit at a reduced overall cost.

Baseline: Requirements that must be achieved by a source before generating a unit of metric. This may include meeting specific load reduction requirements before surplus load reductions may be exchanged or other requirements in the alternative compliance system.

Buyer: The regulated entity that purchases or provides funding for surplus compliance units generated by another entity to meet their own water quality compliance requirements.

Certification: Process that involves the formal inspection, documentation and tracking of implemented actions necessary to ensure the benefits being exchanged as compliance units are being achieved throughout time. Certification is a demonstration to all stakeholders that the project that is generating compliance units will meet expectations. Certification often involves third-party project reviews and physical inspections of implemented practices to ensure actions are appropriately designed, implemented and maintained to achieve intended outcomes as defined by the alternative compliance system framework, guidelines and/or requirements.

Compliance and Enforcement: Entity that ensures that criteria for participants in an alternative compliance system are being met. In the event of non-compliance, the entity can either report to, or is, a delegated authority able to enforce water quality non-compliance provisions as necessary.

Control Measure: Structural or non-structural practices, management changes, or activities that can be implemented to generate measurable or estimated compliance units in an alternative compliance system.

Community-Based Public-Private-Partnership: A form of alternative delivery in which a government agency and private entity partner to improve both water quality and quality of life for a community in a cost-effective way. CBP3s are typically focused on implementing green infrastructure approaches that provide for local economic growth in urban and underserved community.

Compliance Unit: A common measurement unit of equivalent pollutant discharge reduction that reflects both the regulatory pollution control requirement and the measurable or estimated outcome at the alternative source of control. This metric is often expressed as mass pollutant load reduction per time (e.g., pounds/year) or as a scientifically-defensible measure of equivalency between the regulatory requirement and the benefits metric from the alternative control (e.g., “acres greened”, “acres treated”, or “volume managed/treated”). The compliance unit in an alternative compliance system is the unit of water quality benefit, such as a pollution reduction credit or offset, that can be generated and utilized in the alternative compliance system.

Compliance Unit Providers: Entities or individuals that construct or otherwise implement Off-Site GSI Projects that are certified through the Contra Costa County RAC System. Compliance

unit providers are eligible to receive payment when compliance units generated by the Off-Site Projects they have implemented are exchanged.

Compliance Unit-Generating Project: See Off-Site GSI Project.

Current Conditions: An exchange baseline defined as the onsite performance, based on the selected metric(s), of an area prior to the implementation of a control measure or project. This type of exchange baseline allows for all units of water quality benefit generated from a control measure or project to be exchanged as surplus.

Design-Build-Finance (DBF): An approach that combines innovation of design-build with some amount of private sector capital (such as debt or equity). This model often combines private sector funds with existing public sources and allows private capital to fill any gaps in funding.

Design-Build-Finance-Maintain (DBFM): Similar to the DBF approach, DBFM also includes short to medium term financial and maintenance responsibility for the private partner and requires the public partner to retain the responsibility for operation.

Design-Build-Finance-Operate-Maintain-Availability Payment (DBFOM-AP): Similar to DBOM, DBFOM-AP requires the private partner to be responsible for financing while the public partner maintains control over fees and revenue collection (if applicable) and makes pre-established payments to the private entity for project delivery and performance commitments.

Design-Build-Operate-Maintain (DBOM): Similar to the DBF approach, DBOM also includes a short to medium-term operational and maintenance responsibility for the private partner.

Eligible Entities: The types of entities that are allowed to participate as either a buyer or seller in an alternative compliance system.

Eligible Exchanges: The types of purchases, trades, and/or sales of compliance units that are allowable in the system.

Exchange: In authorized alternative compliance systems, “exchange” refers to compliance units that can be transacted between entities to mutually achieve required pollutant reductions. Surplus cost-effective pollutant reductions (compliance units) achieved for one pollutant source can be exchanged with another regulated entity for their alternative compliance.

Exchange Ratio: A numerical value used to convert an estimated load reduction into a tradable compliance unit. An exchange (or trade) ratio may include considerations for: 1) lack of information and risk associated with control measures, implementation and performance (uncertainty); 2) trading of different pollutants or different forms of the same pollutant (equivalency); 3) the distance and unique watershed features that will affect pollutant fate and transport between exchanging entities (delivery); and, 4) compliance risk reduction mechanisms (reserve and retirement).

Grants and Reserve Accounts: A fund set aside by an entity to meet future costs of green infrastructure upkeep and any unexpected future costs.

Green Stormwater Infrastructure: Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or

county, green stormwater infrastructure refers to the patchwork of natural areas that provides habitat, localized flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green stormwater infrastructure refers to stormwater management systems that mimic nature by capturing and storing water.

Guidance: In the context of a legal basis for alternative compliance systems, guidance refers to standards or frameworks provided or approved by a Clean Water Act-delegated agency to provide advice on how best to comply with specific rules.

In-Lieu Fee: An approach to compensatory mitigation for losses of aquatic resources that allows Permittees to provide funds in the form of a payment to an administering government or non-profit conservation organization. Such payments are then pooled to build and maintain off-site mitigation sites.

Legal Basis for Alternative Compliance: Mechanism necessary for implementing an alternative compliance system. This may include, but is not limited to rules, guidance, or plans.

Nonpoint Source: Source of water impairment that does not come from any discernable, confined, and discrete conveyance including, but not limited to, land runoff, precipitation, atmospheric deposition, drainage, seepage, or hydrologic modification.

Off-Site GSI Project: A stormwater capture facility that is designed consistent with MRP C.3.c and C.3.d and captures and treats tributary drainage area that is not associated with a Regulated Project.

Offset Program: Similar to water quality trading, an offset program is a market-based alternative compliance approach in which a source can purchase pollutant reduction credits from another source to achieve a pollutant discharge requirement. Unlike water quality trading, an offset program is often utilized in contexts where regulated dischargers are interested in meeting a water quality pollutant reduction requirement, such as new development or urban growth, but may not have to meet a collective cap on water pollutant discharges.

Performance-based Contracting (PBC): Unlike traditional contracting where payment is based on control measure implementation, performance-based contracting (or "Pay-for-Performance") is an approach to alternative compliance where payment is contingent on the delivery of an outcome. Performance-based contracting can be utilized in several combinations to tie payment to different outcomes.

Plan: In the context of a legal basis for alternative compliance systems, a plan refers to a Clean Water Act-delegated agency approved course of action, such as a TMDL implementation plan, designed to meet water quality standards.

Point Source: Sources of water impairment that come from any discernable, confined, and discrete conveyance.

Public-Private-Partnership: Partnerships involving collaboration between a government agency and a private entity. P3 models may provide communities with an alternative for the finance, design, construction, and operation and maintenance of green stormwater infrastructure, such as green streets.

Regulatory Requirements/TMDL Allocations: An exchange baseline based on regulatory requirements in the region, such as a TMDL allocation. Compliance unit generators must meet these regulatory requirements first, before generating surplus compliance units. Any additional compliance units generated beyond the regulatory requirement by the control measure or project is considered surplus and can be exchanged.

Reserve Pool: A pool of compliance units obtained by the administrator of the alternative compliance system to insure against unforeseen compliance unit losses due to project failure. These compliance units may be set aside from an applied trade ratio.

Rule: In the context of a legal basis for alternative compliance systems, a rule is formal legislation approved by a state's legislative body.

Seller: Entity that generates surplus compliance unit by implementing an approved control measure in order to exchange the generated compliance unit(s) with a buyer in an alternative compliance system. Sellers are also referred to as generators.

System Restrictions/Restricted Waters: Potential limitations placed on the generation or utilization of a compliance unit.

Verification: The part of the certification process that involves the physical inspection of control measures for proper implementation, operation, and maintenance to ensure adherence to the requirements of the alternative compliance system. Verification may be performed by the entity responsible for the certification process or by a verification entity approved by the entity responsible for certification.

Water Quality Monitoring and Evaluation: Protocols within an alternative compliance system implemented to measure and/or track program success and shortcomings. This may include site-specific monitoring of control measures and practices, ambient monitoring of the watershed, or a periodic program evaluation to identify deficiencies in the system design and ensure environmental benefits are being delivered.

FIGURES

Pinole
Hercules
San Pablo
Richmond
El Cerrito
Martinez
Pleasant Hill
Concord
Pittsburg
Antioch
Oakley
Brentwood
Clayton
Walnut Creek
Lafayette
Orinda
Moraga
Danville
San Ramon
Unincorporated

Legend

- Contra Costa County
- City Boundaries
- State Water Resources Control Board Region Boundary
- Within Urban Limit Line or Census Designated Places
- Hydromodification Management Plan (HMP) Applicable
- HMP Applicable AND Within Urban Limit Line or Census Designated Places
- HMP Status Undetermined

N

0 3 6 Miles

Contra Costa County
Urban Limit Line and
Hydromodification Plan Applicable Areas
Regional Compliance for a Sustainable Bay

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Figure 1

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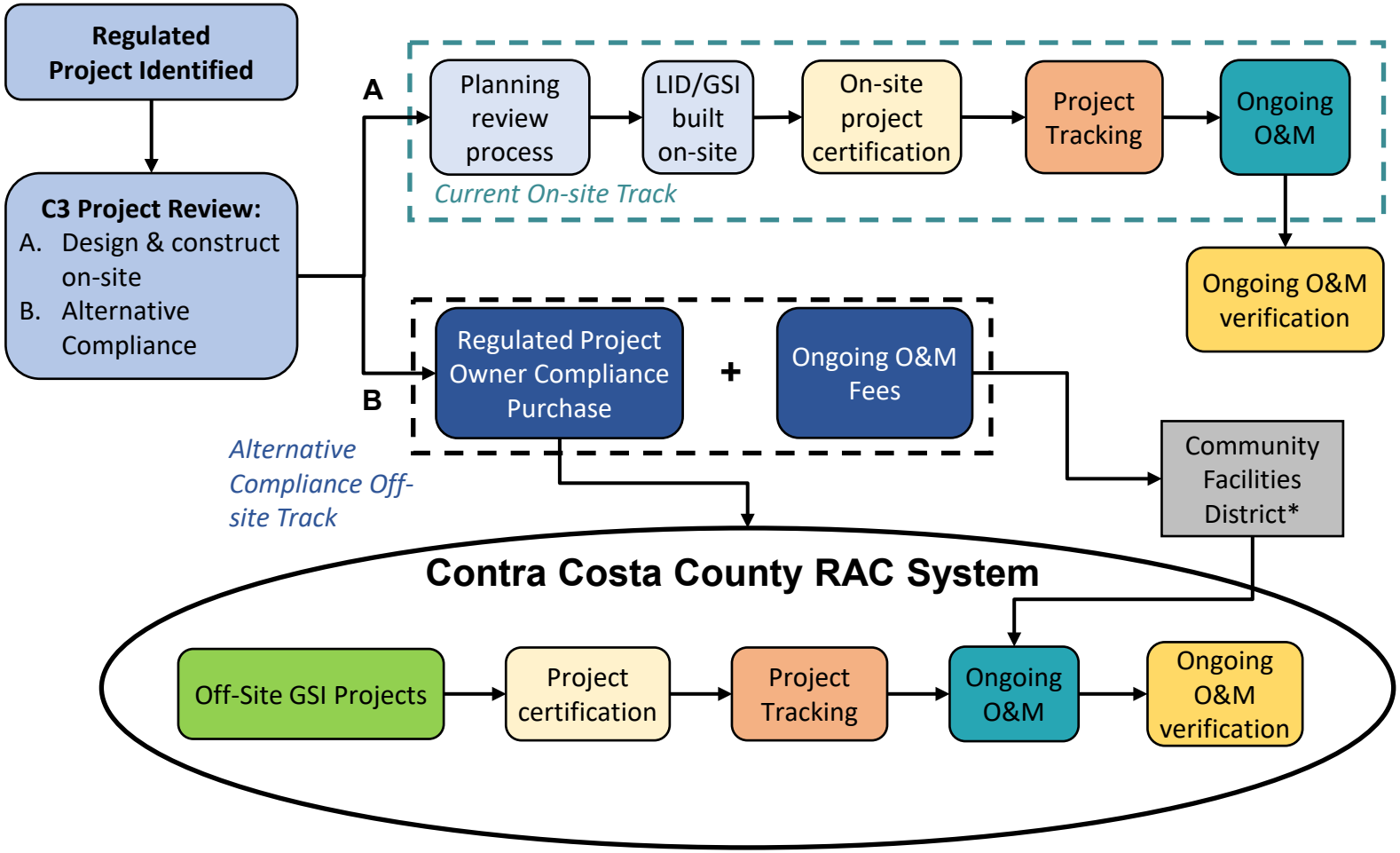
P:\GIS\CCCWP\Project\Regional Compliance for a Sustainable Bay\RAC 2023\RAC_2023.aprx 3/2/2023 10:00 PM (Author: GYao)



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Proposed Contra Costa County RAC System

Regional Compliance for a Sustainable Bay System Summary Report

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Figure 2

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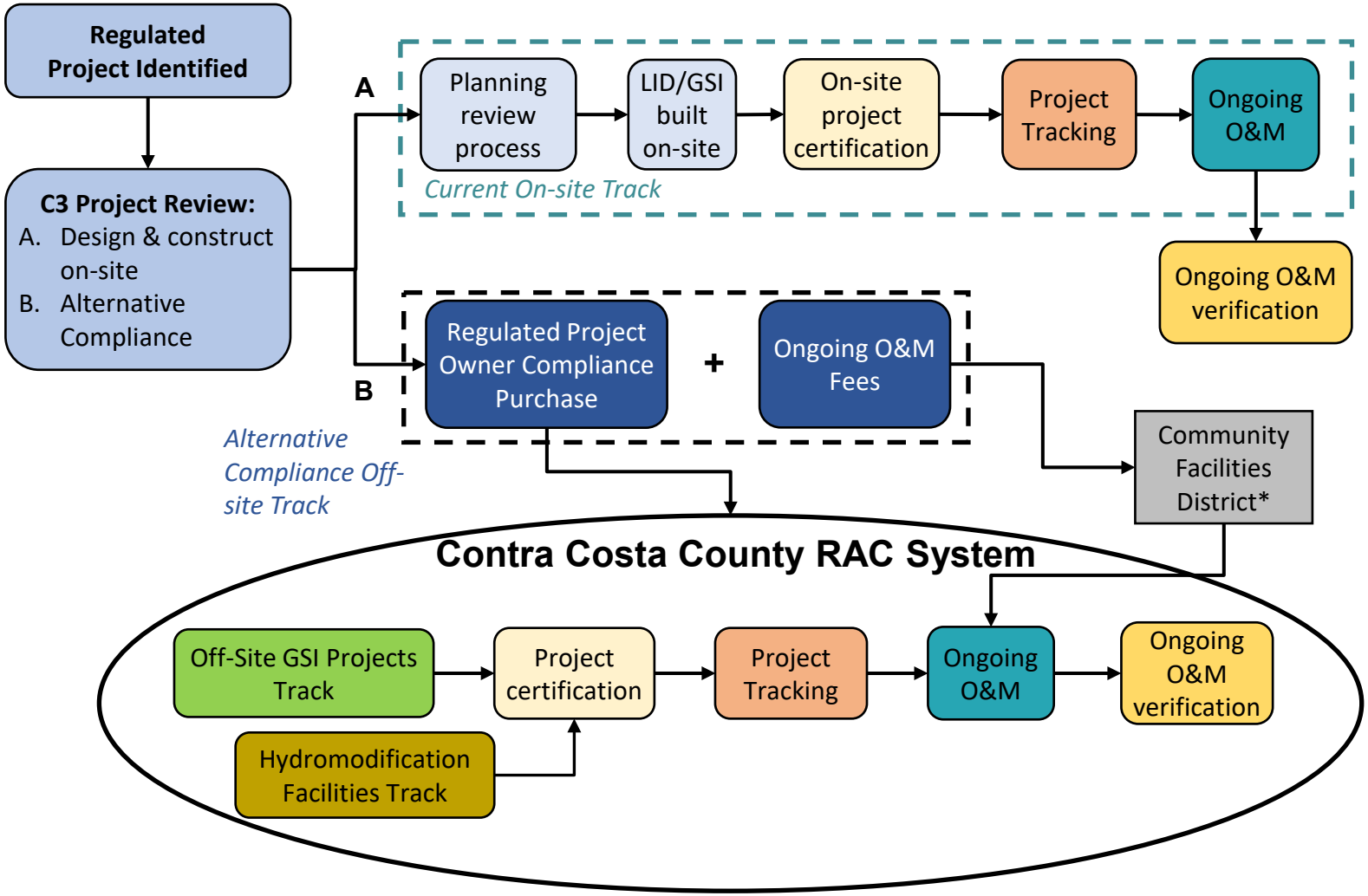

*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Proposed Contra Costa County RAC System With Potential Future Hydromod Track
Regional Compliance for a Sustainable Bay System Summary Report

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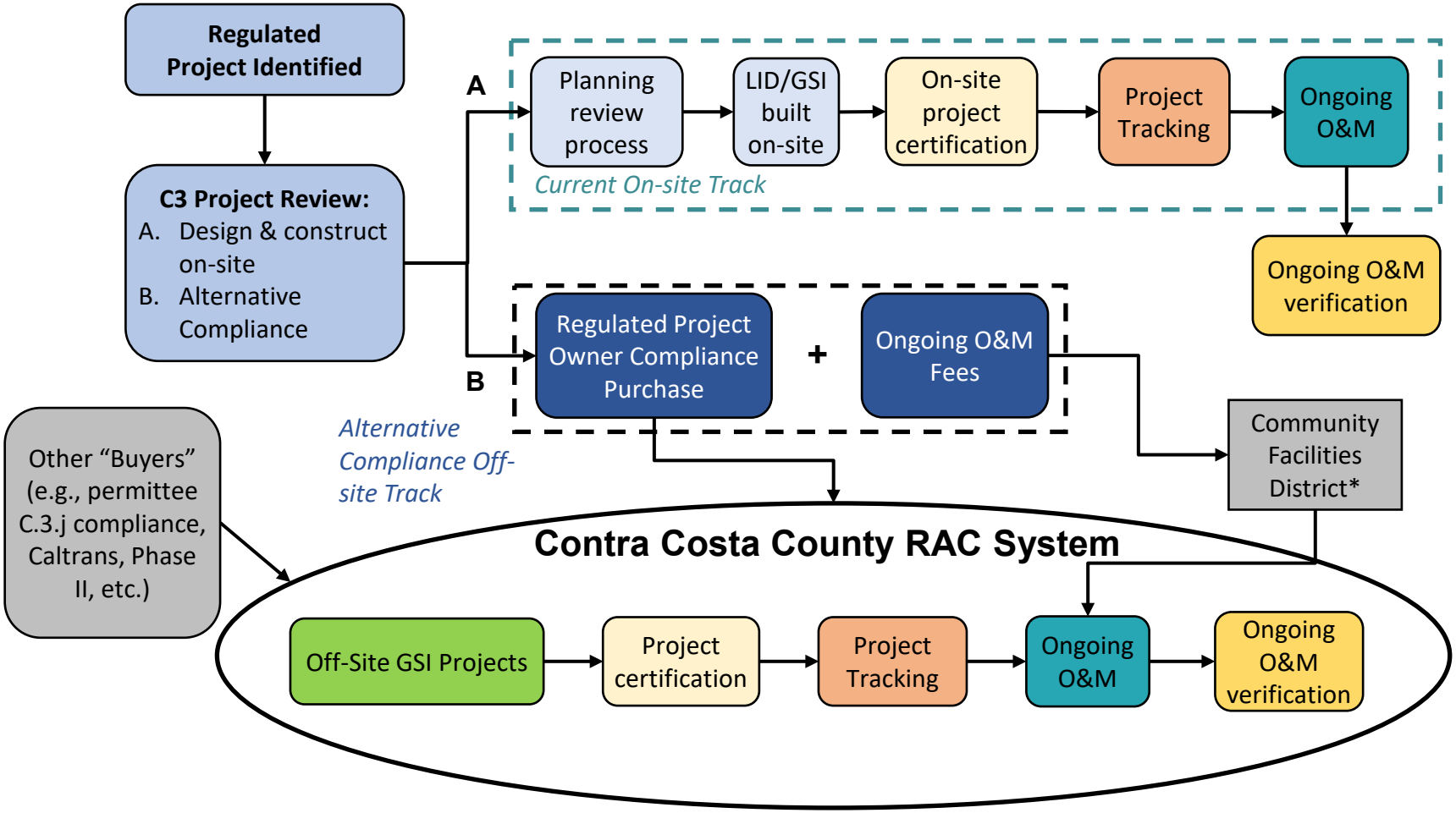
LA0594	March 2023	**Figure 3**



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Proposed Contra Costa County System With Other Buyers
Regional Compliance for a Sustainable Bay System Summary Report

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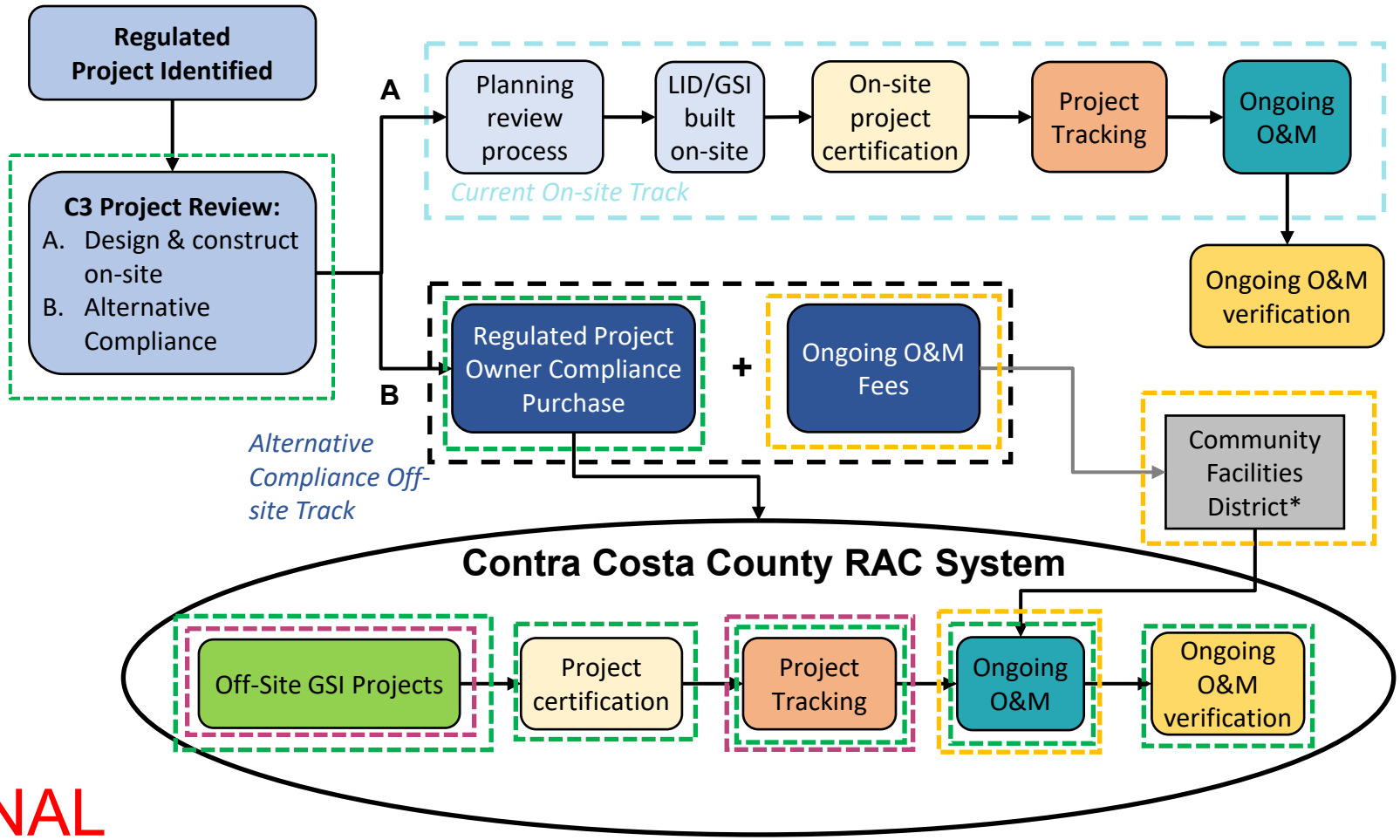
CITY OF SAN PABLO City of New Directions

LA0594	March 2023	**Figure 4**



FINAL

Permittee Administrative responsibilities are shown in Green Hatched Boxes

O&M Fee/Fund Administrative responsibilities are shown in Yellow Hatched Boxes

The CCCWP Administrator and the RAC Subcommittee responsibilities are shown in Pink Hatched Boxes

*Feasibility study and development of a Community Facilities District will take place during Phase 2 of the RAC System.

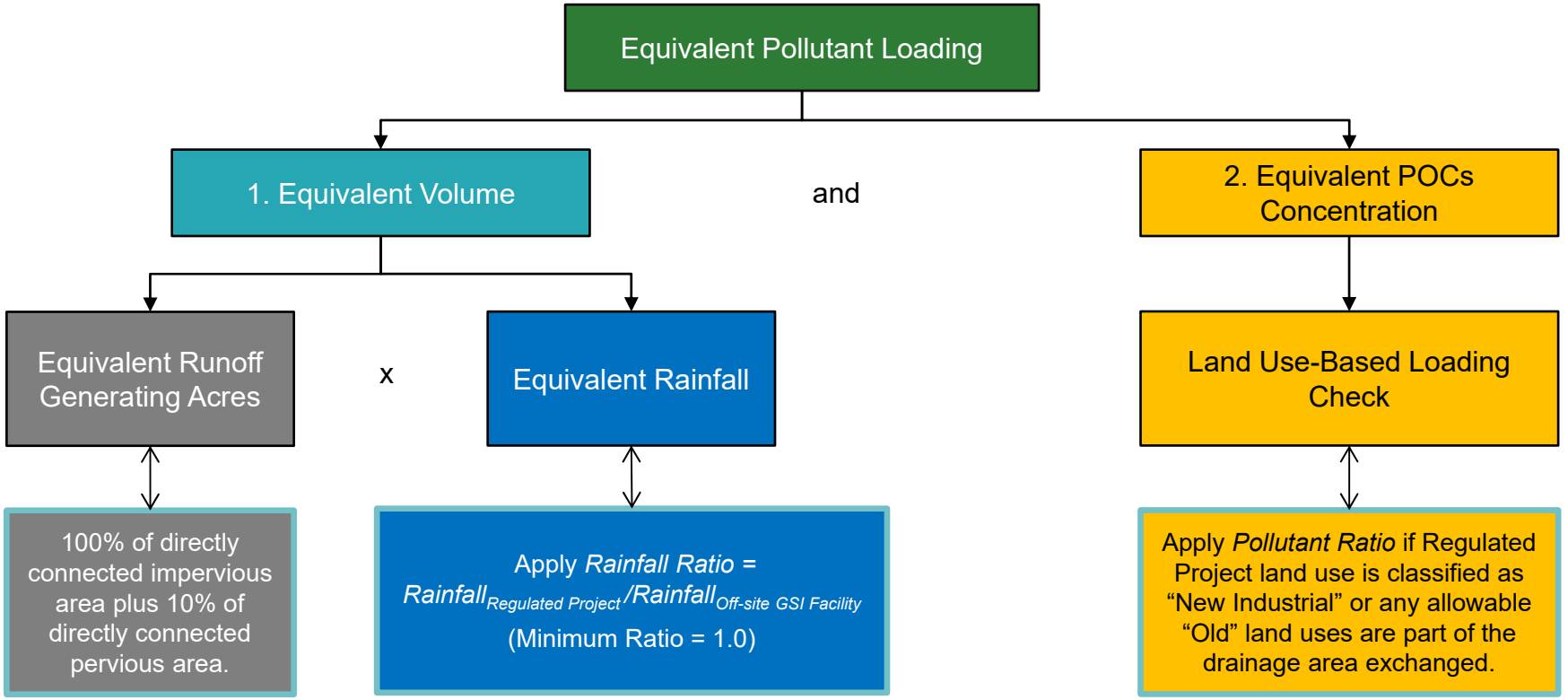
Contra Costa County RAC System
Administrating Entities Roles/Responsibilities
Regional Compliance for a Sustainable Bay
System Summary Report

Geosyntec consultants

CITY OF SAN PABLO
City of New Directions

Figure 5

LA0594 | March 2023



Equivalent Acres Greened generated from Off-Site GSI Facilities are calculated based on Runoff Generated Area only.

- To calculate the Equivalent Acres Greened metrics required for purchase by Regulated Projects, buyers use the formula:

  Equivalent Acres Greened = Runoff Generated Acres $_{\textit{Regulated Project}}$ ***x Ratio*** $_{\textit{Rainfall}}$ ***x Ratio*** $_{\textit{Pollutant}}$

- To calculate the Equivalent Acres Greened metric for purchase by nonregulated projects, buyers use the formula:

  Equivalent Acres Greened = Runoff Generated Acres $_{\textit{non-Regulated Project purchase}}$

Contra Costa County System Equivalent Acres Greened Equivalency Demonstration
Regional Compliance for a Sustainable Bay System Summary Report

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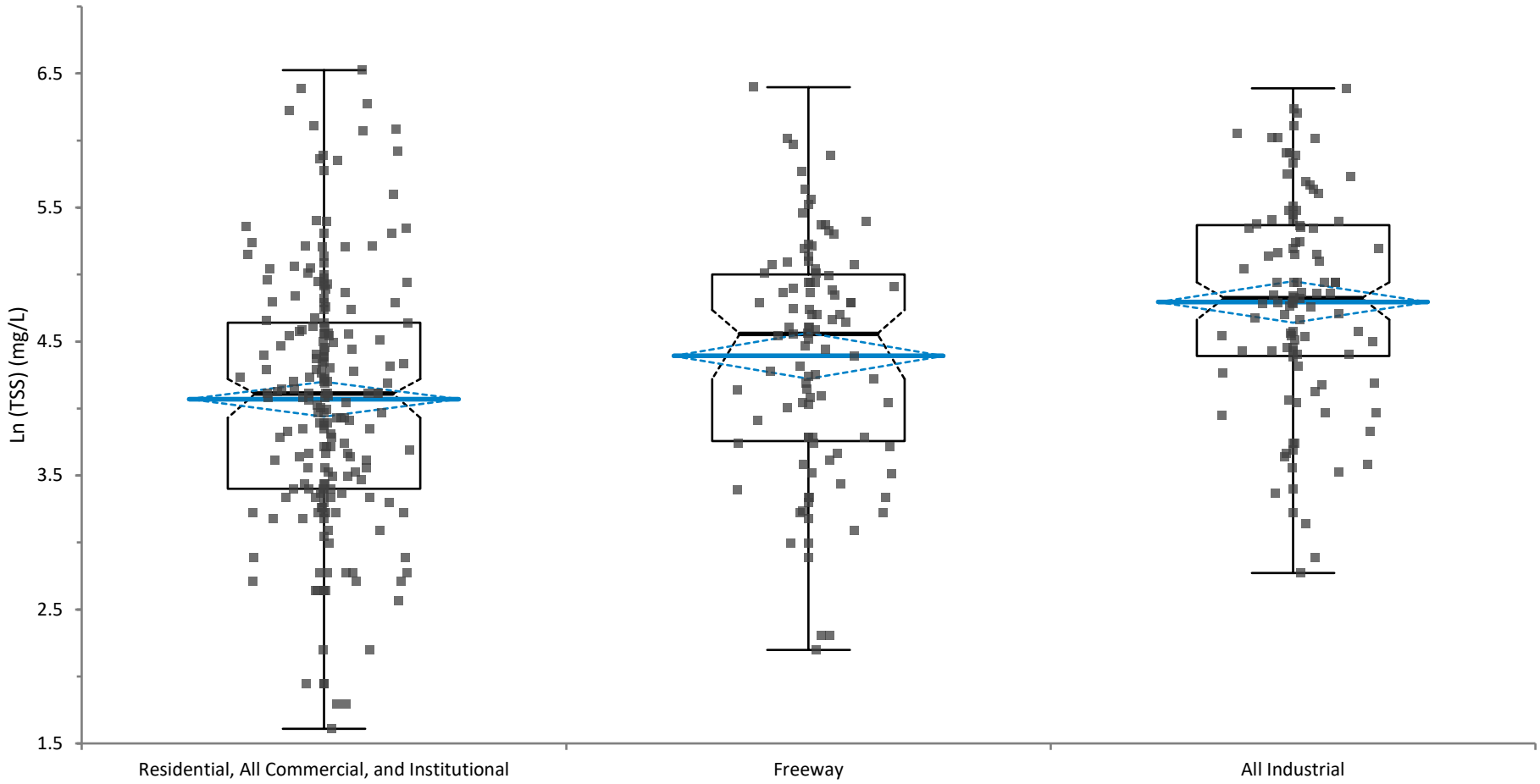
CITY OF SAN PABLO City of New Directions

Figure 6

LA0594 | March 2023



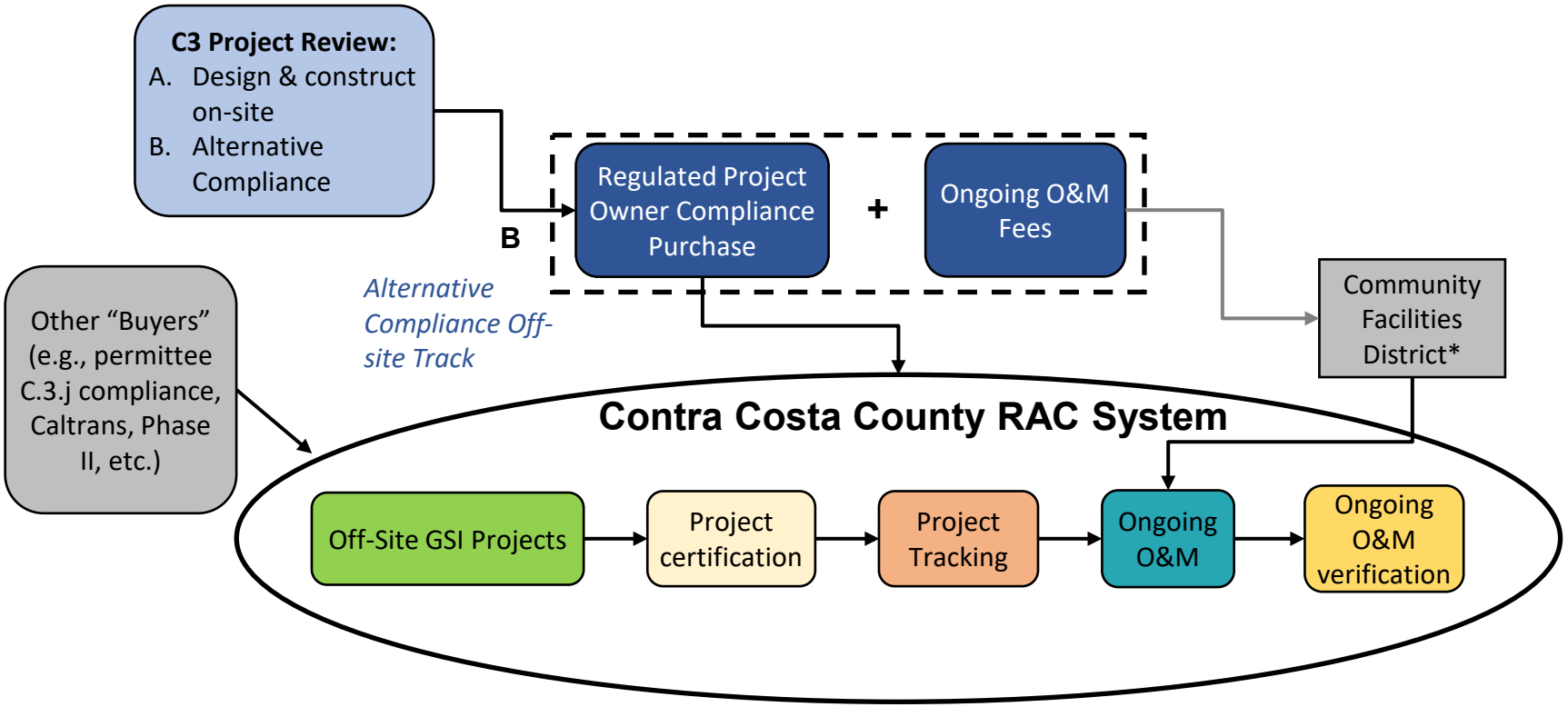
Natural Log Distribution of NSQD TSS Data by Land Use Groups

Regional Compliance for a Sustainable Bay System Summary Report

Geosyntec consultants

CITY OF SAN PABLO City of New Directions

LA0594	March 2023	**Figure 8**



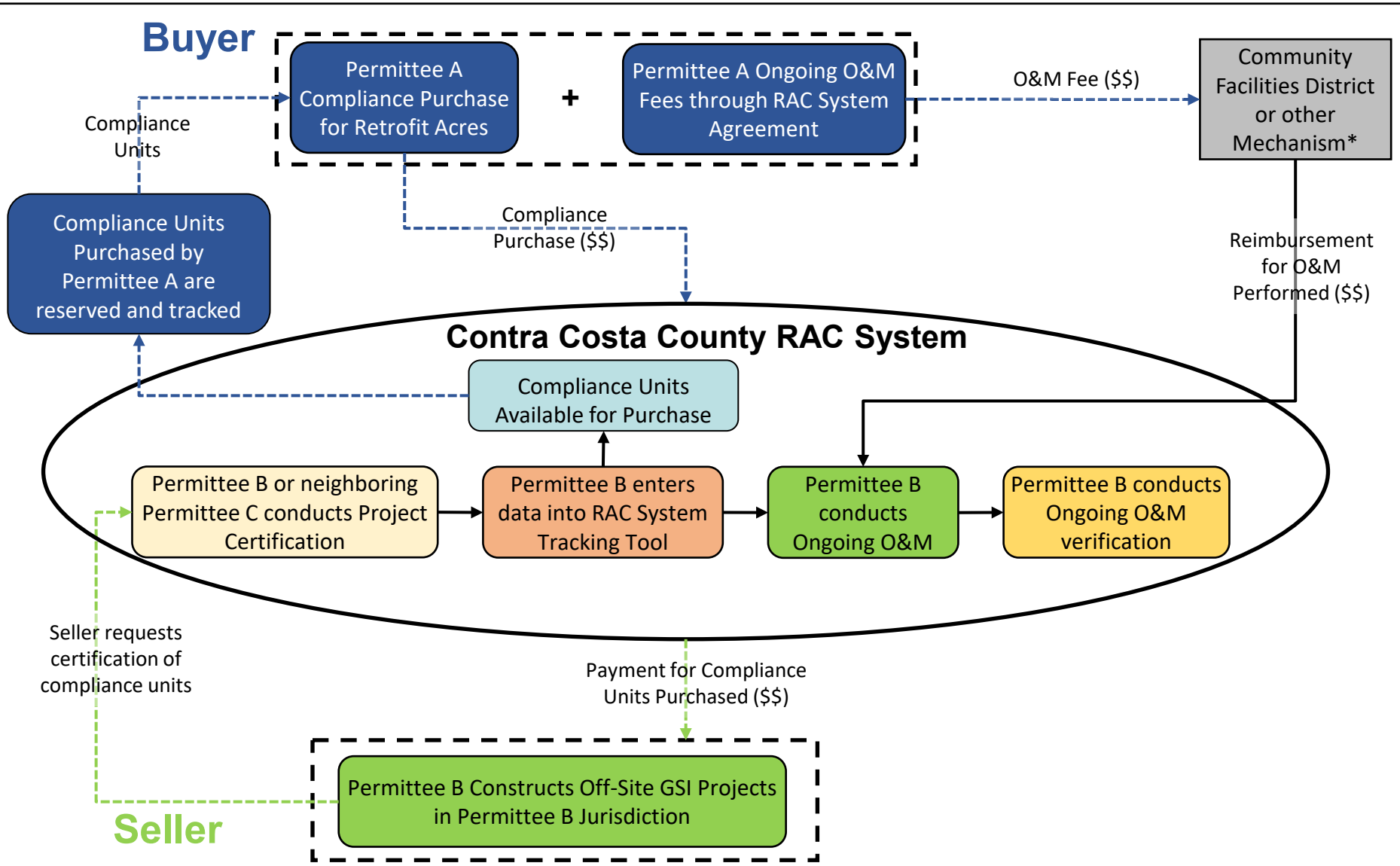
*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Contra Costa County RAC System Exchange Schematics
Regional Compliance for a Sustainable Bay RAC System Summary Report

Geosyntec consultants

CITY OF SAN PABLO City of New Directions

LA0594	March 2023	**Figure 9a**



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Example 1: Permittee to Permittee Exchange

Regional Compliance for a Sustainable Bay RAC System Summary Report

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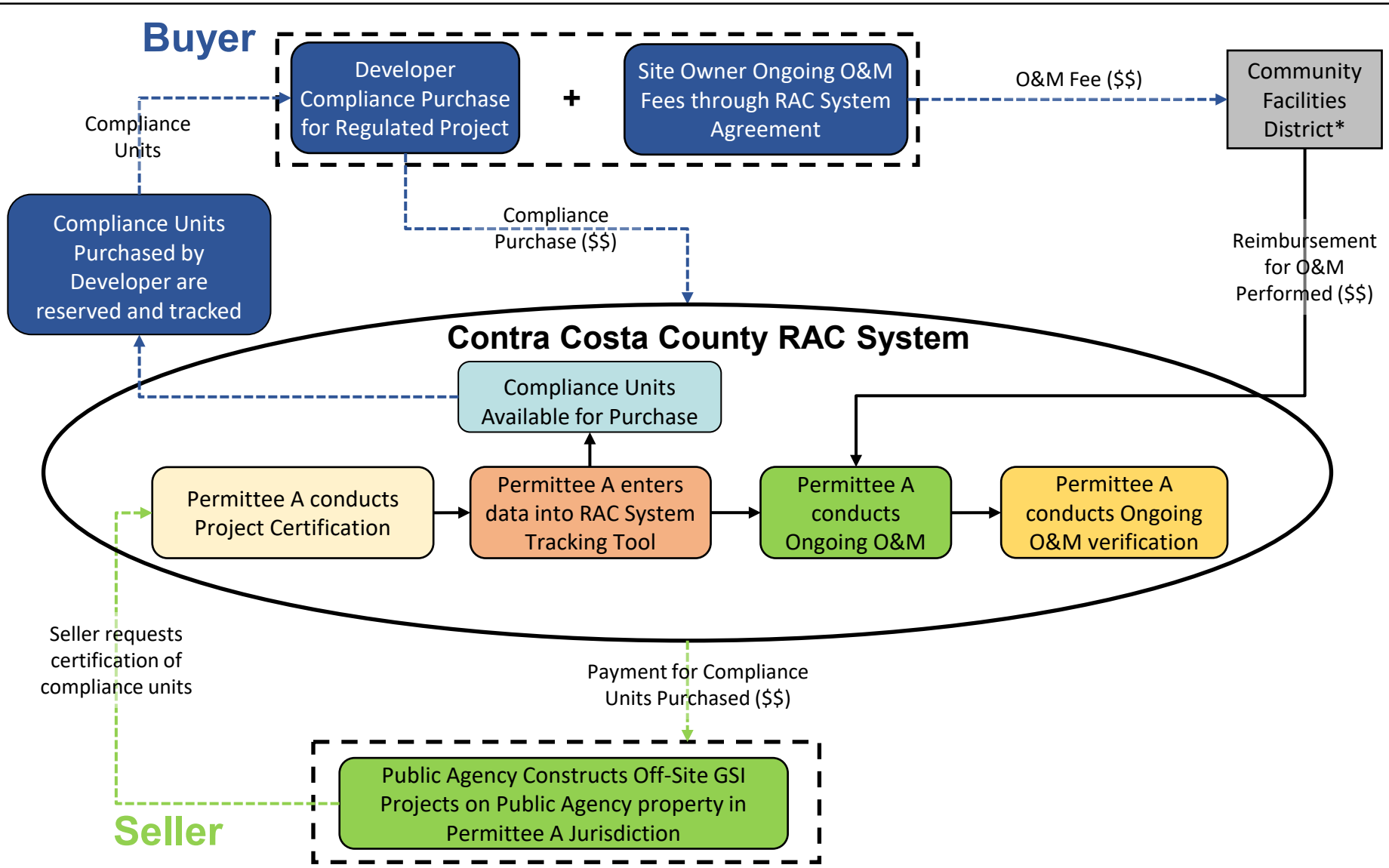
LA0594	March 2023	**Figure 9b**



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Example 2: Public Agency to Developer Exchange

Regional Compliance for a Sustainable Bay RAC System Summary Report

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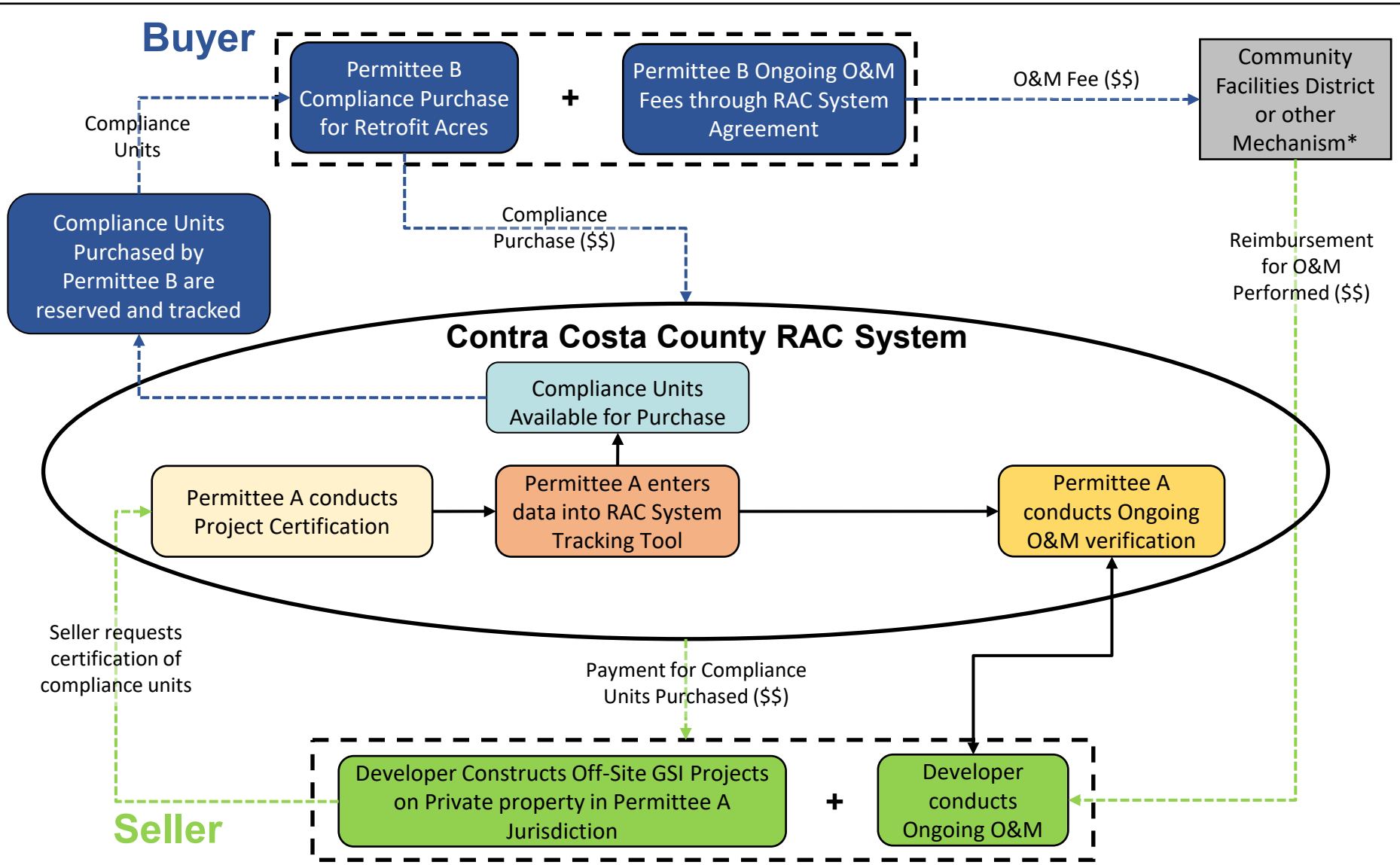
LA0594	March 2023	**Figure 9c**



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Example 3: Private Entity to Public Agency Exchange

Regional Compliance for a Sustainable Bay RAC System Summary Report

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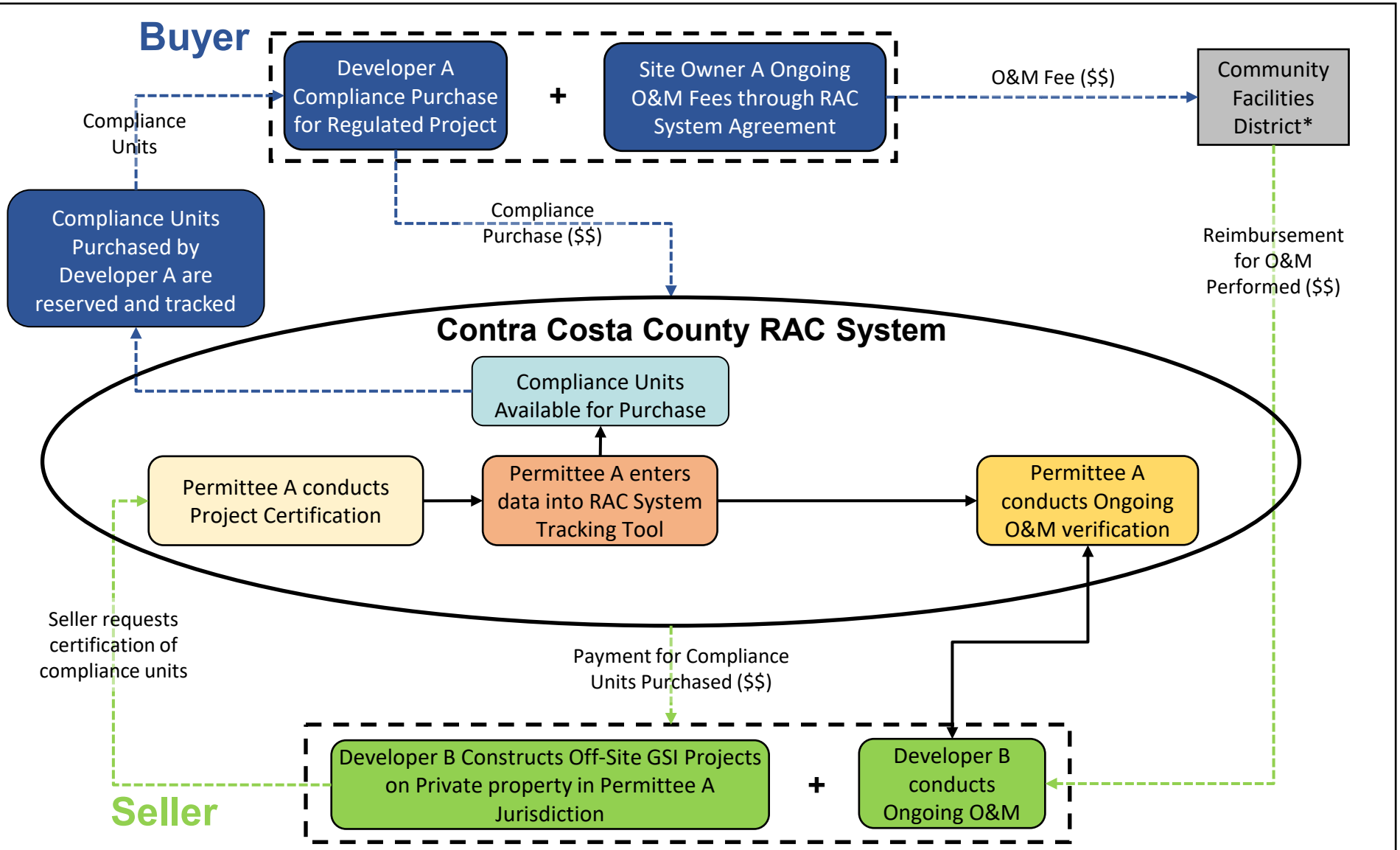
CITY OF SAN PABLO City of New Directions

LA0594	March 2023	**Figure 9d**



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

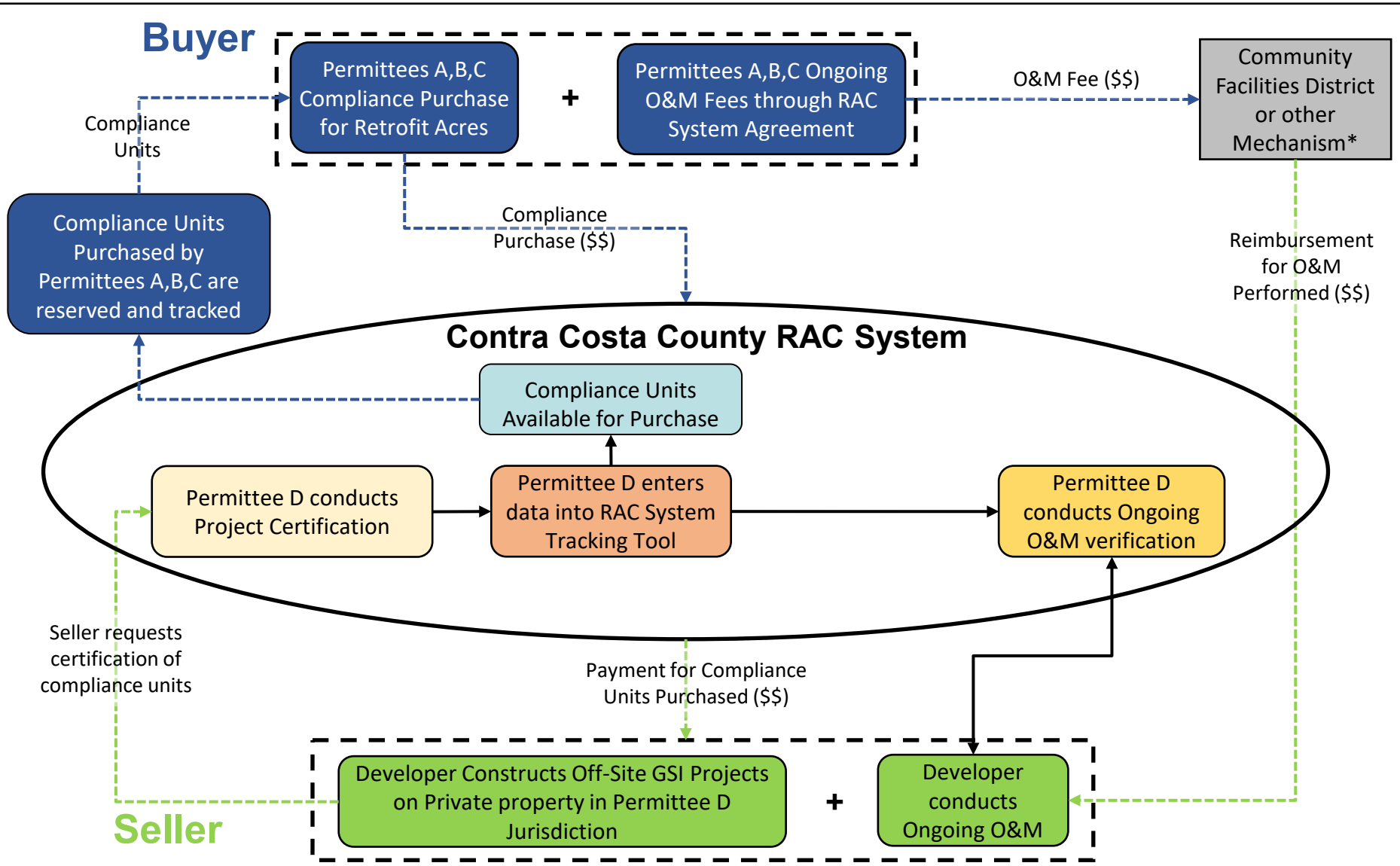
Example 4: Private Entity to Private Entity Exchange

Regional Compliance for a Sustainable Bay RAC System Summary Report

Geosyntec consultants

CITY OF SAN PABLO City of New Directions

LA0594	March 2023	**Figure 9e**



*Feasibility study and development of a Community Facilities District or other O&M fee mechanism will take place during Phase 2 of the RAC System.

Example 5: Private Entity to Permittee Exchange

Regional Compliance for a Sustainable Bay RAC System Summary Report

Geosyntec consultants

CITY OF SAN PABLO City of New Directions

LA0594	March 2023	**Figure 9f**

APPENDIX A

Contra Costa County RAC System Tracking Tool Overview and Instructions

[To Be Provided by SFEI]

APPENDIX B
Contra Costa County RAC System Technical Analyses Details

Appendix B. CONTRA COSTA COUNTY SYSTEM TECHNICAL ANALYSES DETAILS

Details relating to calculations and analyses conducted for the Contra Costa County System are provided in this Technical Appendix.

B.1 Runoff Generating Acres

Runoff Generating Acres form the base unit of the Equivalent Acres Greened calculation. For the RAC System, "Runoff Generating Acres" are calculated based on the impervious and pervious surfaces that generate runoff, and may be different than the effective impervious area. In some cases, runoff coefficients may be different for different impervious surfaces throughout the County. Runoff Generating Acres include 100% of directly-connected impervious surfaces and 10% of pervious surfaces within a given drainage area. Assuming impervious acres and 10% of pervious surfaces will generate runoff is consistent with the "Treatment Only" (i.e., GSI) runoff factors for pervious surfaces in Contra Costa C.3 Technical Manual Table 3-2 (CCCWP, 2017). The runoff coefficient of 10% of pervious surfaces is also validated through the hydrology model developed for the County's Reasonable Assurance Analysis (RAA) for mercury and PCBs, developed in compliance with MRP Provisions C.11 and C.12 (CCCWP, 2020).

The Contra Costa County RAA baseline hydrology model produces average annual runoff values for the WY 2000 – 2009 baseline period of record using a hydrologic response unit (HRU) approach (CCCWP, 2018; CCCWP, 2020). The HRU approach involves modeling various components of land surface features. A total of 586 unique pervious HRU models, which are defined by the combinations of rainfall zone, evapotranspiration zone, hydrologic soil group, slope, and development condition, were modeled across the County. The RAA model was applied to all areas within the Contra Costa County Urban Limit Line (ULL) (i.e., the "65/35" land preservation ordinance that limits urban development in the county to no more than thirty-five percent of the land in the County, see Figure 1). Total precipitation and total estimated runoff for the period of record were aggregated using a geospatial approach for all pervious areas within the County ULL. The aggregated outputs were used to develop an average runoff coefficient for all pervious areas within the County ULL. The resulting pervious runoff coefficient within the County ULL is 9.6%. The runoff coefficient does vary within the County, as soils in the eastern portion of the county are typically sandier than those near the San Francisco Bay margin. When looking at pervious areas within the Region 2 area of the County within the ULL, the resulting pervious runoff coefficient is 10.9%. These values support the use of 10% of pervious surfaces to calculate Runoff Generating Acres.

B.2 TSS EMC Development

Event Mean Concentration (EMC) is an analytical parameter that refers to a flow-weighted average concentration of a pollutant during a rainfall-runoff event. An EMC is defined as the total event mass load divided by the total event runoff volume. As such, estimates of EMCs can be combined with runoff volume estimates to estimate pollutant loading. EMCs for Total Suspended Solids (TSS) were developed for several land use classifications, using data from the National Stormwater Quality Database (NSQD), a database developed by the University of

Alabama and the Center for Watershed Protection under support from the U.S. Environmental Protection Agency (Pitt, 2015).

B.2.1 Data

The NSQD was queried to obtain all TSS stormwater runoff samples collected within EPA Rain Zone 6 in California, in Spring, Fall, or Winter seasons. This query returned 650 stormwater runoff sample results from 647 rain events at 40 sites. Results were separated by the primary land use assigned in the NSQD. Table B-1 below shows the count of data for the listed land use category. Single land use categories are those with greater than 85% of the primary land use in the drainage area tributary to the data sampling point. Mixed land use categories are those with than 85% of the primary land use in the drainage area tributary to the data sampling point less (i.e., "[Land Use] Mix").

Table B-1: Summary of Selected NSQD TSS Data by Land Use

Land Use Category	Count TSS data
Commercial	10
Commercial Mix	38
Freeway	105
Freeway Mix	78
Industrial	14
Industrial Mix	95
Institutional	51
Residential	114
Residential Mix	75
Open Space	70
Grand Total	**650**

As shown in Table 1 above, if data associated with sites that contain less than 85% of the primary land use are removed, the number of data points is greatly decreased in some cases (for example, for Commercial and Industrial) and may not be adequate for developing EMC statistics. Given the data paucity and specifics of the land uses, Geosyntec used the following data analysis groupings to develop representative land use-based TSS EMCs:

- Commercial: Combination of NSQD "commercial" and "commercial mix" data due to the low amount of data.
- Transportation: "Freeway" only data, no mixed freeway land use data.
- Industrial: Combination of "industrial" and "industrial mix" due to the low amount of data.
- Institutional: Summarize "institutional" data and keep separate from Commercial.
- Residential: Use "residential" only data as there is sufficient data.

B.2.2 Statistical Analysis

Data were first transformed by taking the natural logarithm of each data point, with the hypothesis that environmental data is lognormally distributed. The data for each land use

category were analyzed for outliers prior to developing EMCs. Outliers were defined as any data more than 1.5 interquartile ranges (IQRs) below the first quartile or above the third quartile. Outliers were excluded from future steps in the analysis. The number of outliers removed by land use is shown in Table B-2.

Table B-2: Outliers Removed by Land Use

Land Use[1]	Outliers Removed
Residential	2
All Commercial	3
Freeway	5
All Industrial	5
Institutional	0
Open Space	0
Grand Total	**15**

[1] 'All [Land Use]' indicate land use types that are the combinations of single land use and mixed land use data.

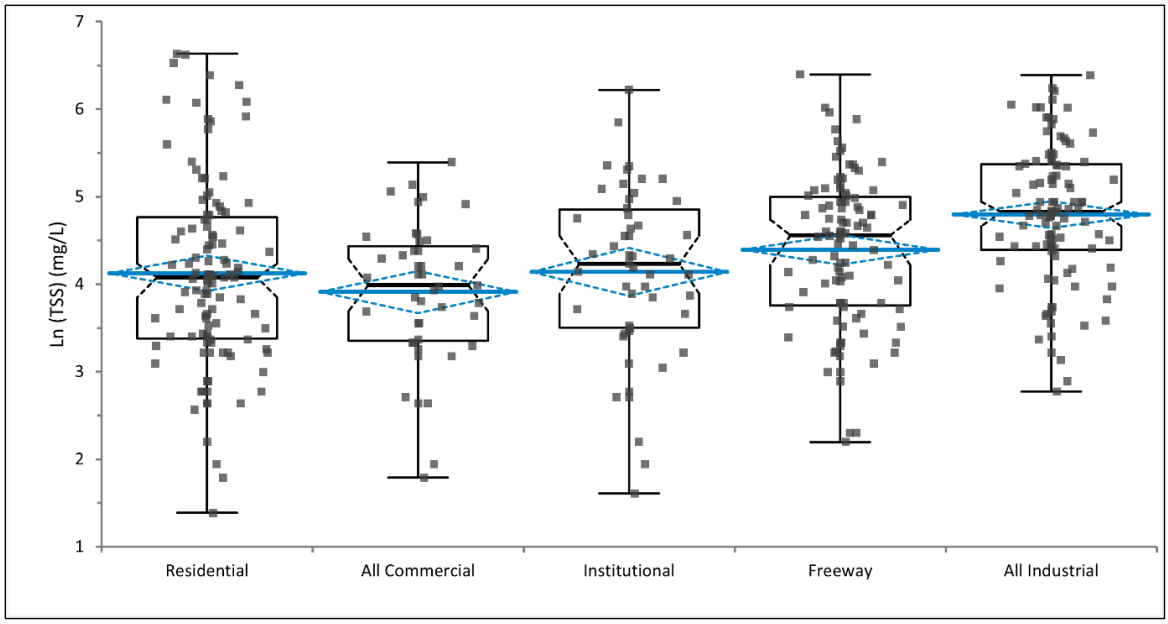
The log-transformed data were assessed for normality using the Shapiro-Wilk test, the results of which are shown in Table B-3. A p-value below the alpha value of 0.05 indicates there is evidence the sample did not come from a normally distributed population. Open Space land use data was concluded to not come from a normally distributed population. Given this finding and that Open Space land use is not expected to make up a large part of GSI drainage areas, Open Space data was not examined further for EMC development.

Table B-3: Shapiro-Wilk Test Results by Land Use

Land Use	W	p	Conclusion
Residential	0.98	0.199	Normal
All Commercial	0.97	0.252	Normal
Freeway	0.98	0.271	Normal
All Industrial	0.99	0.335	Normal
Institutional	0.98	0.589	Normal
Open Space	0.95	0.007	Not normal

Land uses were compared to each other to understand if significant differences in the distribution of TSS concentrations exist. The distributions for each land use are shown in Figure 1, and their cumulative distribution functions (with 95% confidence interval bands) are shown in Figure 2.

Figure B-1: Distribution of TSS Results by Land Use



Throughout this document, medians are shown as bold lines (with a 95% confidence interval shown as a notch on the box) means as blue lines (with 95% confidence interval shown as a dashed diamond), the 1st and 3rd quartiles as the edges of the boxes, and minimums/maximums as end caps.

Box plot results demonstrate that the data mean, median, 25th, and 75th percentile TSS concentrations for All Industrial and Freeway land use groupings are higher than those for the other three land uses, which are more similar to each other. To investigate this, a series of Wilcoxon-Mann-Whitney tests were conducted to compare each land use pair. The results of the tests are shown in Table B-4. A p-value below the alpha value of 0.05 indicates the TSS values of the compared land uses are likely not derived from the same population.

Table B-4: Wilcoxon-Mann-Whitney Tests by Land Use

Land Use Comparisons	Wilcoxon-Mann-Whitney Test p-Values
All Commercial *and* Institutional	0.1554
All Commercial *and* Residential	0.4375
Institutional *and* Residential	0.5240
Institutional *and* Freeway	0.1504
All Industrial *and* Freeway	0.0017
All Industrial *and* Institutional	<0.0001
All Industrial *and* Residential	<0.0001
Residential *and* Freeway	0.0147
All Commercial *and* All Industrial	<0.0001
All Commercial *and* Freeway	0.0020

The results shown in Table 4 indicate that the Residential, All Commercial, and Institutional data sets are likely derived from the same population (i.e., TSS concentrations are not statistically

different between these land uses based on data analyzed). Since All Commercial, Residential, and Institutional do not have statistically distinct TSS concentrations, the three land use categories are combined for EMC development. In contrast, All Industrial data is significantly different than all the other land uses and Freeway is statistically different than almost all the other land uses.

Given the results of the Wilcoxon-Mann-Whitney tests and review of the data distributions, the following data groupings were used for TSS EMCs and Pollutant Ratio developments:

- Residential, All Commercial, and Institutional
- Freeway
- All Industrial

The box plot showing the data distributions for these data groupings is shown in Figure B-2. The cumulative distribution functions for the data groupings is provided as Figure B-3. Both support the selection of land use groupings used to develop TSS EMCs.

Figure B-2: Distribution of TSS Results by Final Land Use Groups

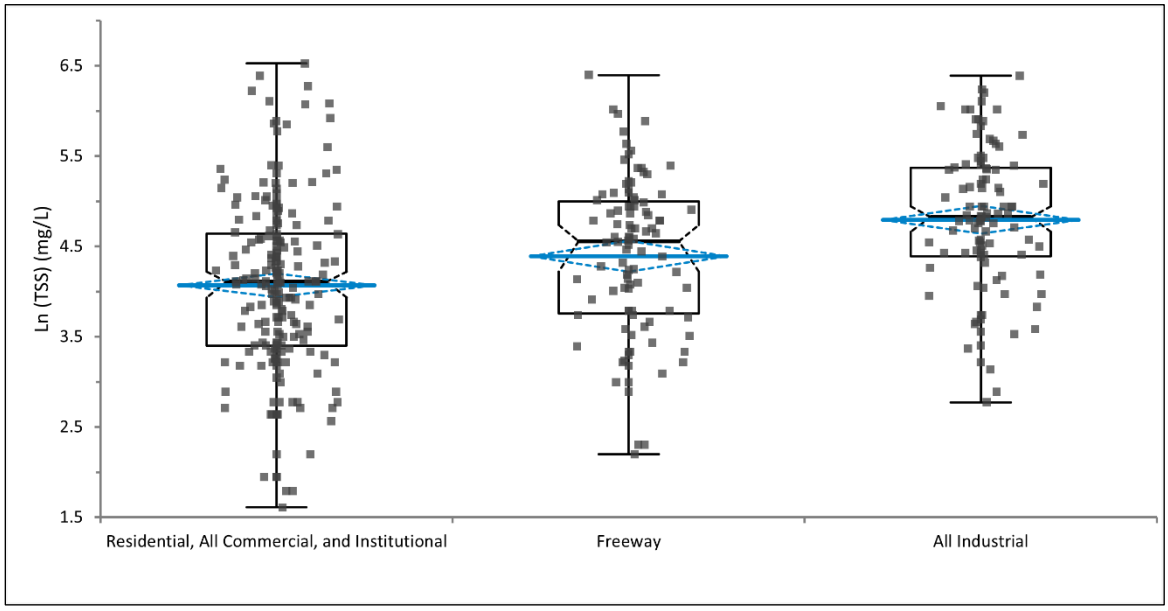
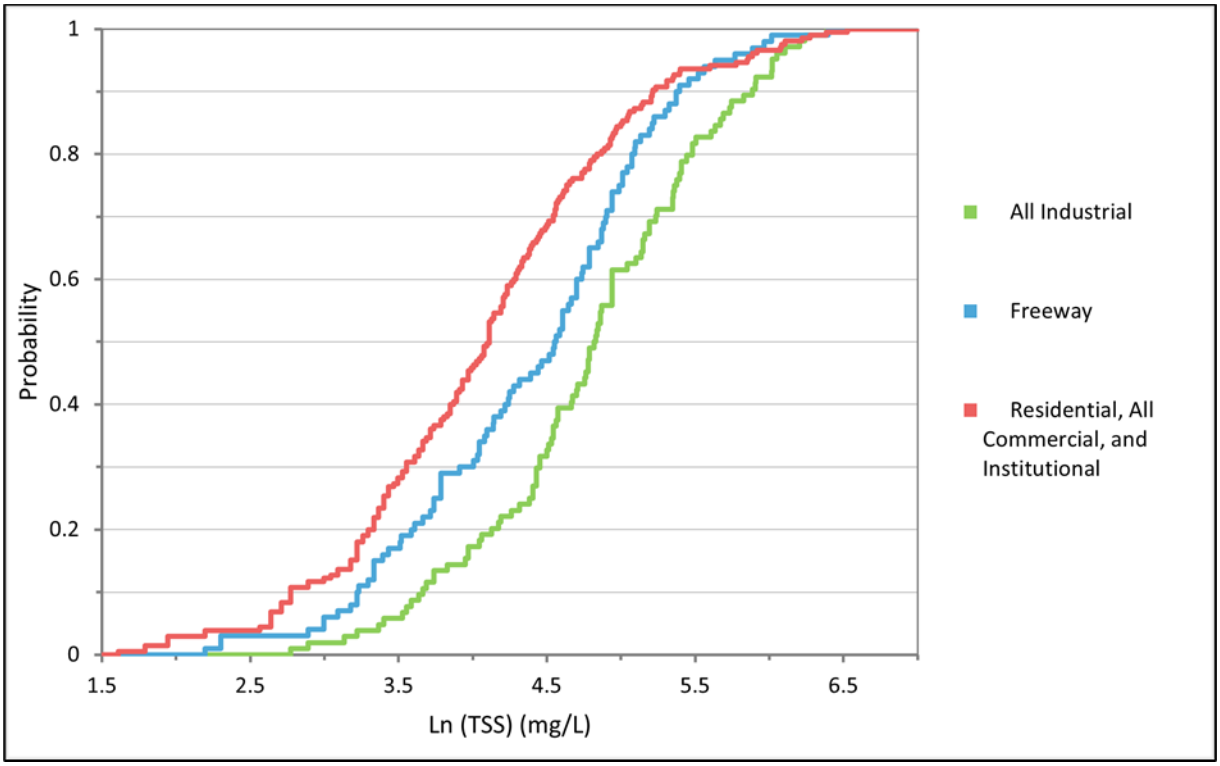


Figure B-3: Cumulative Distribution Functions for TSS Results by Final Land Use Groups



B.2.3 Conclusions

TSS EMCs were developed for the three land use groupings by taking the arithmetic mean of the natural log-transformed distributions, using the natural logs of the mean and the standard deviation as shown in the equation below (from Geosyntec and Wright Water Engineers, 2009):

$$Sample\ Mean = \exp\left(\mu_{ln} + 0.5\sigma_{ln}^2\right)$$

Where:

exp = e to the power of

μ_{ln} = the mean of the natural log-transformed distribution

σ_{ln}= the standard deviation of the natural log-transformed distribution

The back-transformed results are shown in Table B-5.

Table B-5: TSS EMCs by Land Use

Land Use	Data Count	μ_{ln}	σ_{ln}	TSS EMC (mg/L)
Residential, All Commercial, and Institutional[1,2]	205	4.07	0.95	92
Freeway/ Transportation[3]	100	4.39	0.86	117
All Industrial	104	4.79	0.79	166

[1] Three additional outliers were removed after combining the dataset associated with the three land uses.

[2] Includes adjacent collector and local roadways.

[3] Transportation includes interstate highways, freeways, multilane highways, and principal arterials.

B.3 References

Geosyntec Consultants and Wright Water Engineers, Inc., 2009. Urban Stormwater BMP Performance Monitoring. October.

Pitt, R., 2015. National Stormwater Quality Database (NSQD) v 4.02. Downloaded January 28, 2021. bmpdatabase.org/nsqdstat.html

San Francisco Estuary Institute (SFEI), 2018. Regional Watershed Spreadsheet Model (RWSM) Toolbox v1.0 User Manual and Pollutant Model.

APPENDIX C
Contra Costa County RAC System Template Documents

APPENDIX C
Contra Costa County RAC System Template Documents

Model Stormwater Ordinance Language for the Contra Costa County RAC System

Preliminary Draft – Model Stormwater Ordinance Revisions
Subject to Change

Appendix C-1
Model Stormwater Ordinance Language Revisions[1]
for the Contra Costa County Regional Alternative Compliance System

City of _____
Ordinance No.

An Ordinance of the City of _____Amending Chapter __ of Title _ of the Municipal Code relating to Stormwater Management and Discharge Control

The City Council of the City of _____ does ordain as follows:

Section 1.

Chapter __ of Title _ of the _____ Municipal Code is hereby amended to read as follows:

Chapter __. Stormwater Management and Discharge Control

Sec. _____. 01. Intent and Purpose.

(a) The intent of this chapter is to protect and enhance the water quality in the City of _____'s watercourses pursuant to, and consistent with the Porter-Cologne Water Quality Control Act (Water Code section 13000 et seq.) and the Federal Clean Water Act (33 U.S.C. section 1251 et seq.).

(b) This chapter also carries out the conditions in the City's National Pollutant Discharge Elimination System (NPDES) permit that require implementation of appropriate source control and site design measures and stormwater treatment measures for development projects.

(c) It is the purpose of the City Council in enacting this chapter to protect the health, safety and general welfare of _____'s citizens by:

(1) minimizing non-stormwater discharges, whose pollutants would otherwise degrade the water quality of local streams, to the stormwater system.

(2) minimizing increases in nonpoint source pollution caused by stormwater runoff from development that would otherwise degrade local water quality.

(3) controlling the discharge to the City's stormwater system from spills, dumping or disposal of materials other than stormwater.

[1] Revisions made to the CCCWP Model Stormwater Ordinance dated March 5, 2013.

(4) reducing stormwater run-off rates and volumes and nonpoint source pollution whenever possible, through stormwater management controls and ensuring that these management controls are properly maintained and pose no threat to public safety.

Sec. _____. 02. Definitions.

The following words and phrases when used in this chapter shall be as defined herein. Words and phrases in this chapter and not otherwise defined shall be interpreted as defined in the regulations issued by the U.S. Environmental Protection Agency to implement the provisions of the Federal Clean Water Act, and as defined by the State Water Resources Control Board to implement the Porter-Cologne Act:

(a) ***Alternative compliance*** shall mean a method allowed by the City's NPDES permit by which an applicant may comply with development runoff requirements for stormwater management facility(ies) at one or more offsite location(s) or pay equivalent in-lieu fees to provide stormwater management at an offsite project constructed and maintained by others.

(~~a~~b) ***Best management practices or "BMP"*** are structural devices, measures, stormwater management facilities, activities, prohibitions, or practices; general good housekeeping, pollution prevention practices, maintenance procedures, and other management practices, to prevent or reduce the discharge of pollutants directly or indirectly to watercourses, water bodies, and wetlands.

(~~b~~c) ***City's NPDES permit*** shall mean the NPDES permit issued to the City of _____, Permit No. CAS612008 [for East County: Permit No. CAS083313] and any subsequent amendment, reissuance or successor to this NPDES permit.

(d) ***Compliance units*** shall mean a unit of exchange defined in the Contra Costa County Regional Alternative Compliance System Summary Report that can be purchased by buyers seeking alternative compliance with development runoff requirements.

(e) ***Contra Costa County Regional Alternative Compliance System*** shall mean the System, as described in the most recent version of the Contra Costa County Regional Alternative Compliance System Summary Report, in which an applicant may achieve alternative compliance with development runoff requirements for stormwater management facilities by purchasing compliance units from an offsite stormwater management facility that has been certified by the System.

(~~c~~f) ***Development runoff requirements*** shall mean the provisions in the City's NPDES permit that contain performance standards to address both the construction and post-construction phase impacts of new projects and redeveloped projects on stormwater quality.

(~~d~~g) ***Director*** shall mean the _____ of the City of _____ or his or her designee.

(~~e~~h) ***Enforcement officer or Officer*** shall mean those individuals designated by the Director to act as authorized enforcement officers.

(~~f~~i) ***Guidebook*** shall mean the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook.

(~~g~~j) ***Non-stormwater discharge*** is any addition of any pollutant to the City's stormwater system, except discharges pursuant to a NPDES permit, or discharges further exempted in Section _____.06(c) and (d) of this chapter.

(~~h~~k) ***Pollutant*** shall mean any material other than stormwater including, but not limited to, petroleum products or by-products, solid waste, incinerator residue, sewage, sewage sludge, heat, chemical waste, biological materials, radioactive materials, wrecked or discarded equipment, rock, sand, soil and industrial, municipal or agricultural waste discharged into the water or stormwater system.

(~~i~~l) ***Premises*** shall mean any building, structure, facility, or installation, (including a building's grounds or other appurtenances), and adjacent sidewalks and parking strips.

(~~j~~m) ***Responsible person*** shall mean the owner or occupant of any premises or who engages in any activity from which there is or may be a non-stormwater discharge or any person who releases pollutants to the City's stormwater system.

(~~k~~n) ***Stormwater*** shall mean flow on the surface of the ground resulting from precipitation.

(~~l~~o) ***Stormwater control plan*** shall mean a plan that meets those criteria contained in the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook.

(~~m~~p) ***Stormwater management facility*** shall mean any device that utilizes detention, retention, filtration, harvest for reuse, evapotranspiration or infiltration to provide treatment (and/or control volume, flows, and durations) of stormwater for purposes of compliance with development runoff requirements.

(~~n~~q) ***Stormwater system*** is that system of facilities by which stormwater may be conveyed to any stream, watercourse, other body of water or wetlands, including flood control channels, any roads with drainage systems, city streets, catch basins, curbs, gutters, ditches, improved channels, storm drains or storm drain system, which are not part of a Publicly Owned Treatment Works ("POTW") as that term is defined in 40 CFR section 122.2.

Sec. _____. 03. Responsibility for Administration.

The Director or his designee shall administer this chapter for the City.

Sec. _____. 04. Construction and Application.

This chapter shall be construed consistent with the requirements of the Federal Clean Water Act and amendments thereto or applicable implementing regulations and the City's NPDES permit.

Sec. _____. 05 Stormwater Control Plan Required.

(a) In accordance with thresholds and effective dates in the City's NPDES Permit, every application for a development project, including but not limited to a rezoning, tentative map, parcel map, conditional use permit, variance, site development permit, design review, or building permit that is subject to the development runoff requirements in the City's NPDES permit shall be accompanied by a stormwater control plan that meets the criteria in the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook. The stormwater control plan shall include a description of the low impact development site design measures, pollutant source control measures, stormwater treatment (and/or control of volume, flows, and durations as applicable) in stormwater management facility(ies), and construction-phase BMPs in accordance with the Guidebook..

(b) Implementation of an approved stormwater control plan and submittal of an approved stormwater control operation and maintenance plan by the applicant shall be a condition precedent to the issuance of a certificate of occupancy for a project subject to this section. If the applicant has chosen to comply with stormwater management facility requirements by purchasing compliance units from the Contra Costa County Regional Alternative Compliance System, the applicant must submit documentation describing the offsite stormwater management facility being used for alternative compliance and authorizing the exchange of compliance units and the payment of in-lieu fees and annual O&M payments.

(c) All stormwater management facilities shall be designed in a manner to minimize the need for maintenance and reduce the chances of failure. Design guidelines are outlined in the Guidebook.

(d) All stormwater management facilities shall be maintained according to the Guidebook and the approved stormwater control operation and maintenance plan. The person(s) or organization(s) responsible for maintenance shall be designated in the stormwater control operation and maintenance plan. Unless a different time period is provided for in the plan, those responsible for maintenance shall inspect the stormwater management facility at least annually. The stormwater operation and maintenance plan shall also describe how the maintenance costs will be funded. Upon the failure of a responsible person to maintain a stormwater management facility in accordance with this chapter or the plan, the City may perform the maintenance and recover its costs from the responsible person as provided in sections __.17 and __.18.

(e) For access to stormwater management facilities for inspections and maintenance, recorded covenants or easements shall be provided by the property owner for access by the City, the Contra Costa Mosquito and Vector Control District, and the Regional Water Quality Control Board.

Sec. _____. 06. Prohibited Discharges.

(a) The release of non-stormwater discharges to the City stormwater system is prohibited.

(b) The discharge of stormwater from premises or an activity that causes or contributes to a violation of receiving water limitations in the City's NPDES permit is prohibited.

(c) The following discharges are exempt from the prohibition set forth in subsection (a) above:

(1) any discharge in compliance with a NPDES permit issued to the discharger.

(2) flows from riparian habitats and wetlands, diverted stream flows, flows from natural springs, rising ground waters, uncontaminated and unpolluted groundwater infiltration, single-family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains, and pumped groundwater from drinking water aquifers.

(d) The following discharges are exempt from the prohibition set forth in subsection (a) above if and only if the discharges are in accordance with conditions including but not limited to specific conditions for each type of discharge set forth in Section C.15 of the City's NPDES permit: pumped groundwater from non-drinking-water aquifers; pumped groundwater from other sources, foundation drains, and water from crawl space pumps and footing drains; air conditioning condensate; planned discharges from routine operation and maintenance activities in the potable water distribution system; unplanned discharges from breaks, leaks, overflows, fire hydrant shearing, or emergency flushing of the potable water distribution system; emergency discharges of the potable water distribution system as a result of firefighting, unauthorized hydrant openings, or natural or man-made disasters; individual residential car washing; swimming pool, hot tub, spa, and fountain water discharges, and discharges from irrigation water, landscape irrigation, and lawn or garden watering.

.

Sec. _____. 07. Discharge in Violation of NPDES Permit.

Any discharge that would result in or contribute to a violation of the City's NPDES permit either separately considered or when combined with other discharges, is prohibited. Liability for any such discharge shall be the responsibility of the person causing or responsible for the discharge, and such person shall defend, indemnify and hold harmless the City in any administrative or judicial enforcement action relating to such discharge.

Sec. _____. 08. Unlawful Discharge and Unlawful Connections.

(a) It is unlawful to establish, use, maintain or continue unauthorized drainage connections to the City's stormwater system, and to commence or continue any unauthorized discharges to the City's stormwater system.

(b) No discharge shall cause the following conditions, create a nuisance, or adversely affect beneficial uses of waters of the State:

(1) floating, suspended or deposited macroscopic matter or foam;

(2) bottom deposits or aquatic growth;

(3) alterations of temperature, sediment load, nutrient load, or dissolved oxygen, which cause significant adverse impacts to native aquatic biota;

(4) visible, floating, suspended or deposited oil or products of petroleum origin; or,

(5) substances present in concentrations or quantities which cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption.

Sec._____. 09. Best Management Practices and Standards.

(a) ***Generally.*** Any person owning or operating premises that may contribute pollutants to the City's stormwater system shall undertake best management practices to reduce the potential for pollutants entering the system to the maximum extent practicable. Examples of such premises include, but are not limited to, parking lots, gasoline stations, industrial facilities, and other commercial enterprises. Examples of best management practices include, but are not limited to, those described in publications by the United States Environmental Protection Agency, the California Water Boards, the California Stormwater Quality Association, the Bay Area Stormwater Management Agencies Association, the Contra Costa Clean Water Program, and, the City of _____.

(b) ***Litter.*** No person shall throw, deposit, leave, keep or permit to be thrown, deposited, placed, left or maintained, any refuse, rubbish, garbage or other discarded or abandoned objects, articles or other litter in or upon any street, alley, sidewalk, business place, creek, stormwater system, fountain, pool, lake, stream, river or any other body of water, or upon any public or private parcel of land so that the same might become a pollutant, except in containers or in lawfully established waste disposal facilities.

(c) ***Sidewalks.*** The occupant or tenant, or in the absence of occupant or tenant, the owner or proprietor of any real property in front of which there is a paved sidewalk shall maintain said sidewalk free of dirt or litter to the maximum extent practicable. Sweepings from the sidewalk shall not be swept or otherwise made or allowed to go into the gutter or roadway, but shall be disposed of in receptacles maintained as required for the disposal of solid waste. This section constitutes an alternative procedure and shall not limit or restrict the City from the civil, criminal or administrative enforcement of this or other city ordinances in any other matter provided by law.

(d) ***Maintenance of Facilities and Landscaped Areas.*** Best Management Practices shall be implemented to minimize the release of pesticides, fertilizers, herbicides, and other related materials used to maintain landscaping and facilities.

(e) ***Parking Lots, Paved Areas and Related Stormwater Systems.*** Persons owning, operating or maintaining a paved parking lot, the paved areas of a gasoline station, a paved private street or road, and related stormwater systems shall clean those premises as frequently and thoroughly as practicable in a manner that does not result in the discharge of pollutants to the City's stormwater system. The Director may require installation and maintenance of devices or facilities to prevent the discharge of trash or other pollutants from private parking lots, streets, roads, and drainage facilities into the storm drain system. Failure or refusal to comply with such requirement is prohibited and shall constitute a violation of this Chapter.

(f) ***Construction Activities.*** All construction projects shall incorporate site-specific BMPs, which can be a combination of BMPs from the California BMP Handbook, Construction, January 2003, the Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, the San Francisco Bay Regional Water Quality Control Board Erosion and Sediment Control Field Manual, 2002, the City's grading and erosion control ordinance and other generally accepted engineering practices for erosion control as required by the director. The Director may establish controls on the rate, volume, and duration of stormwater runoff from new developments as may be appropriate to minimize the discharge and transport of pollutants.

(g) ***Notification of Intent and Compliance with General Permits.*** Each discharger associated with construction activity or other discharger described in any general stormwater permit addressing discharges, as may be adopted by the United States Environmental Protection Agency, the State Water Resources Control Board, or the California Regional Water Quality Control Board, San Francisco Bay Region [for East County: Central Valley Region], shall provide the Director with the notice of intent, comply with and undertake all other activities required by any general stormwater permit applicable to such dischargers. Each discharger identified in an individual NPDES permit relating to stormwater discharges shall comply with and undertake all activities required by the permit.

(h) ***Development Runoff Requirements***. For each new development project subject to the development runoff requirements, every applicant will submit a stormwater control plan and implement conditions of approval that reduce stormwater pollutant discharges through the construction, operation and maintenance of treatment measures and other appropriate source control and site design measures. Similarly, increases in runoff volume, flows, and durations shall be managed in accordance with the development runoff requirements. An applicant may comply with development runoff requirements for stormwater management facility(ies) through alternative compliance at one or more offsite location(s) or pay equivalent in-lieu fees to provide stormwater management at an offsite project constructed and maintained by others, in accordance with the City's NPDES permit and criteria in the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook. Alternative compliance may include purchasing compliance units from an offsite stormwater management facility that has been certified by the Contra Costa County Regional Alternative Compliance System.

(i) ***Stormwater Pollution Prevention Plan.*** The Director may require any business or utility in the City that is engaged in activities that may result in non-stormwater discharges or runoff pollutants to develop and implement a stormwater pollution prevention plan, which must include an employee training program. Business activities which may require a stormwater pollution prevention plan include maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading, fueling, vehicle maintenance, food handling or processing, or cleanup procedures, carried out partially or wholly out of doors.

(j) ***Coordination with Hazardous Material Release Response and Inventory Plans.*** Any business subject to the Hazardous Material Release Response and Inventory Plan, Division 20, chapter 6.95 of the California Health and Safety Code (commencing with section 25500), shall include, in that Plan, provision for compliance with this chapter, including the prohibitions of non-stormwater discharges and the requirement to reduce release of pollutants to the maximum extent practicable.

Sec. _____. 10. Authority to Inspect.

(a) ***Generally.*** Routine or scheduled inspections shall be based upon as reasonable a selection process as may be deemed necessary to carry out the intent of this chapter, including, but not limited to, random sampling or sampling in areas with evidence of stormwater contamination, evidence of the discharge of non-stormwater to the stormwater system, inspection of stormwater treatment and flow-control facilities for proper operation and evidence of routine and corrective maintenance, or similar activities. Inspections may also be conducted in conjunction with routine or scheduled inspections conducted by other public agencies or special districts, including but not limited to the Central Contra Costa Sanitary District, the Contra Costa County Fire Protection District, County Environmental Health Department, the Contra Costa Mosquito and Vector Control District, or the Regional Water Quality Control Board. The City Council may by resolution establish a schedule of fees for inspections.

(b) ***Authority to Sample and Establish Sampling Devices.*** With the consent of the owner or occupant, or pursuant to a search or inspection warrant, any Officer may establish on any property such devices as are reasonably necessary to conduct sampling or metering operations. During all authorized inspections, the Officer may take any sample deemed necessary to aid in the pursuit of the inquiry or in the recordation of the activities on site.

(c) ***Notification of Spills.*** All persons in charge of the premises or responsible for emergency response for the premises have a responsibility to train premises' personnel and maintain notification procedures to ensure that immediate notification is provided to the City of any suspected, confirmed or unconfirmed release of pollutants creating a risk of non-stormwater discharge into the City stormwater system.

As soon as any person in charge of the premises or responsible for emergency response for the premises has knowledge of any suspected, confirmed or unconfirmed release of non-stormwater discharge entering the City stormwater system, such person shall take all necessary steps to ensure the detection and containment and clean up of such release and shall notify the City of the occurrence by telephoning the Director. This notification requirement is in addition to and not in lieu of other required notifications.

(d) ***Requirement to Test or Monitor.*** Any Officer may require that any person engaged in any activity or owning or operating any premises that may cause or contribute to non-stormwater discharges, undertake such monitoring activities or analysis and furnish such reports as the Officer may specify. The burden, including costs of these activities, analysis and reports shall bear a reasonable relationship to the need for the monitoring, analysis and reports and the benefits to be obtained. The recipient of such request shall undertake and provide the monitoring, analysis and reports required.

Sec. _____. 11. Violations

(a) The violation of any provision of this chapter, or failure to comply with any of the mandatory requirements of this article shall constitute a misdemeanor, except that notwithstanding any other provisions of this article, any violation constituting a misdemeanor under this chapter may, at the discretion of the Officer or city attorney, be charged and prosecuted as an infraction.

(b) Any person required to perform monitoring, analysis, reporting or corrective activity pursuant to this Chapter by any Officer may be informed of such decision, in writing, by a notice of violation. Any person aggrieved by the decision of the Officer, may file a written appeal of the notice of violation to the Director within 10 (ten) days following the date of the notice of violation. Upon receipt of such request, the Director shall request a report and recommendation from the Officer and shall set the matter for hearing at the earliest practical date. At said hearing, all evidence and testimony deemed relevant and admissible by the Director shall be considered, and the Director may reject, affirm, or modify the Officer's decision. Formal rules of evidence shall not apply. The decisions of the Director shall be final. Failure to request a hearing or appear at the hearing shall constitute a waiver and failure to exhaust administrative remedies.

(c) In addition to the penalties and procedures provided herein, any condition caused or permitted to exist in violation of any of the provisions of this chapter is a threat to the public health, safety and welfare. Such condition is hereby declared and deemed to be a nuisance, which may be abated as provided in Chapter _ of Title _ (commencing with section _____) of this Code including the assessment of the costs of abatement which may be collected at the same time and in the same manner as ordinary municipal taxes as provided by Government Code section 38773.5, and by civil action to abate, enjoin or otherwise compel the cessation of such nuisance by the City Attorney.

Sec. _____. 12. Penalty for Violation.

(a) Upon conviction of a misdemeanor, a person shall be subject to payment of a fine, or imprisonment, or both, not to exceed the limits set forth in California Government Code section 36901.

(b) Upon conviction of an infraction, a person shall be subject to payment of a fine, not to exceed the limits set forth in California Government Code section 36900.

Sec. _____. 13. Continuing Violation.

Every day that any violation of this chapter shall continue shall constitute a separate offense.

Sec. _____. 14. Concealment.

Concealing, aiding or abetting a violation of any provision of this chapter shall constitute a violation of such provision.

Sec. _____. 15. Acts Potentially Resulting in Violation of the Federal Clean Water Act or Porter-Cologne Act.

Any person who violates any provision of this chapter, or the provisions of any permit issued pursuant to this chapter, or who releases a non-stormwater discharge, or who violates any cease and desist order, prohibition or effluent limitation, may also be in violation of the Federal Clean Water Act or the Porter-Cologne Act and may be subject to the enforcement provisions of

those acts, including civil and criminal penalties. Any enforcement actions authorized pursuant to this chapter may also include notice to the violator of such potential liability pursuant to federal or state law.

Sec. _____. 16. Civil Actions.

(a) In addition to any other remedies provided in this chapter, any violation of this chapter may be enforced by civil action brought by the City. In any such action, the City may seek, as appropriate, any and all of the following remedies:

(1) a temporary restraining order, preliminary injunction and permanent injunction;

(2) an action for an unlawful business practice pursuant to Business and Professions Code section 17206;

(b) In addition any person violating this chapter shall be liable for:

(1) reimbursement for the costs of any investigation, inspection or monitoring which led to the discovery of the violation;

(2) costs incurred in removing, correcting, or terminating the adverse effect(s) resulting from the violation;

(3) compensatory damages for the loss of, or destruction to, water quality, wildlife, fish or aquatic life. Costs and damages under this subsection shall be paid to the City and shall be used exclusively for costs associated with monitoring and establishing a stormwater discharge pollution control system and implementing or enforcing the provisions of this chapter;

(4) the cost of maintenance and repair of any BMP or stormwater management facility that is not maintained in accordance with the guidebook or the stormwater control plan;

(5) the reasonable costs of preparing and bringing administrative action under this chapter.

Sec. _____. 17. Remedies Not Exclusive.

The remedies identified in this chapter are in addition to, and do not supersede or limit, any and all other remedies, administrative, civil or criminal. The remedies provided for herein shall be cumulative and not exclusive.

Sec. _____. 18. Judicial Review.

The provisions of Code of Civil Procedure section 1094.5 are applicable to judicial review of determinations made by the Director pursuant to this chapter.

Section 2.

This ordinance shall take effect on the 31st day following its adoption.

Participant Memorandum of Understanding (MOU) – Annotated Outline
Draft – August 23, 2022

This Contra Costa County Regional Alternative Compliance System (RAC System) participant agreement (agreement) outlines the roles and responsibilities of both the RAC System administrator and the municipalities agreeing to participate in the RAC System. The agreement is a Memorandum of Understanding (MOU) that participant municipalities will sign and reference in their stormwater ordinances and/or municipal codes. Participation in the RAC System is voluntary; however, all participants must adhere to the RAC System as described in the Regional Alternative Compliance System Summary Report (Summary Report) (Exhibit A).

This MOU is made and entered into this _____ day of _____ 20__ by and between the Contra Costa Clean Water Program (CCCWP), Contra Costa County Flood Control District (Flood Control District), and all Contra Costa County municipalities subject to the prevailing Municipal Regional Permit (MRP)[1] (Permittees) that voluntarily agree to participate in the program (i.e., RAC System Participants). All of the above-mentioned entities are hereinafter collectively referred to as "PARTIES" or individually as "PARTY".

I. Background -- This section describes the background that led to the need for the RAC System; i.e., permitting requirements, water quality issues, space constraints, and funding needs that the RAC System was developed to address.

The key regulatory driver for regional alternative compliance in Contra Costa County (the County) is the MRP, NPDES Permit No. CAS6122008. Three provisions of the MRP acted as the impetus to the development of the RAC System:

Provision C.3- New Development & Redevelopment

MRP 3.0 included specific numeric goals for impervious acres treated by Green Stormwater Infrastructure (GSI) retrofit projects. The MRP 3.0 Appendix H, Table H-1, includes GSI retrofit requirements for each permittee expressed as impervious acres treated. Permittees may meet their individual retrofit requirements on a countywide basis. The Contra Costa County countywide GSI retrofit requirement is 57.32 impervious acres treated.

Provisions C.11.c and C.12.c – Mercury and Polychlorinated Biphenyls (PCBs) Controls

MRP 3.0 Provisions C.11.c and C.12.c require Permittees to implement treatment control measures, diversion to wastewater treatment facilities, GSI, or other control measures to achieve mercury and PCBs load reductions. Contra Costa County Permittees may comply with this provision through implementation of control measures within 664 acres of old industrial land use area[2] (countywide), based on the implementation of 70 percent efficient treatment control measures, or a larger area using less effective control measures.

[1] MRP 3.0, effective July 1, 2022. Order No. R2-2022-0018; NPDES Permit No. CAS612008.
[2] The MRP defines old industrial land use areas as "land areas where industrial activities occurred prior to 1980 and continue today." The MRP further identifies 11,199 acres of old industrial land use in Contra Costa County draining to an MS4 that have not been redeveloped or treated with GSI or other treatment controls.

The estimated costs for Permittees to comply with the MRP are significant. The costs to treat the public GSI project area identified in the Contra Costa TMDL Control Measure Plan ranges from $915 million to $1.88 billion (CCCWP, 2020). The Permittees are faced with these compliance costs even while municipal stormwater program funding is typically inadequate to cover existing storm drain infrastructure maintenance. A system that can provide compliance cost savings and additional benefits would be helpful for Countywide stormwater water quality and infrastructure management.

II. Purpose - This section describes the overall purpose of the RAC System and specific goals/objectives that the program was designed to achieve.

The Contra Costa County RAC System is intended to provide a flexible, efficient, cost-effective, and scientifically defensible compliance option for addressing the GSI and mercury/PCBs control requirements outlined in the MRP (Provisions C.3, C.11, and C.12, respectively). Specific objectives of the RAC System include the following:

- Flexible compliance with the MRP, particularly Provision C.3.b (Regulated Projects) using the Alternative Compliance Provision C.3.e, but potentially also Provision C.3.j (Green Infrastructure Planning and Implementation);
- Cost efficiencies through implementation of regional stormwater capture projects that provide treatment at a lower cost per acre as well as lower maintenance, operation, and inspection costs;
- Targeted implementation of facilities that can provide higher load reduction benefits toward compliance with the San Francisco Bay mercury and PCBs Total Maximum Daily Loads (TMDLs) to achieve reductions in MRP Provisions C.11 and C.12 respectively;
- Implementation of stormwater capture and water quality improvement projects that provide multiple benefits, including benefits ancillary to those relating to MRP Provisions C.3, C.11, and C.12; and
- Flexibility to adapt the RAC System to meet future water quality needs.

III. PARTIES and Roles – This section identifies the PARTIES to this MOU and defines their roles.

- The RAC System Administrator will be the primary administrator of the Contra Costa County RAC System and will be responsible for the management, financial administration, and reporting requirements for the Contra Costa County RAC System. The RAC System Administrator is responsible for conducting the following RAC System tasks:
    - Pool compliance purchase payments and disburse them to compliance metric provider(s) for project implementation.
    - Manage and complete Countywide reporting for the RAC System.
    - Manage RAC System Tracking Tool (e.g., managing Tracking Tool operator, QA/QC).
    - Conduct QA/QC review of data entered by Jurisdictions into the RAC System Tracking Tool regarding non-Regulated project buyers and exchanges.
    - Conduct recommended adaptive management including:
        - Amend RAC System Framework and pre-approved list of control measures, and/or
        - Enact other identified RAC System revisions.

- The RAC System Assessor will manage the ongoing Operation and Maintenance (O&M) Assessment levied through [the mechanism for the assessment]. The Assessor is responsible for conducting the following RAC System tasks:
    - Levy and collect the ongoing O&M assessments.
    - Pool the assessments through [the mechanism].
    - Disburse the collected O&M assessment funds.
    - Evaluate (in coordination with the RAC System Administrator) and update the O&M assessment amount regularly.
    - Perform associated reporting.
- RAC System Participants will include participating Permittees and participating private and public Regulated Project owners. By participating in the RAC System, each participating Permittee agrees to manage MRP Provision C.3 Regulated Project applicants and compliance metric providers that construct Off-Site GSI Projects within their jurisdictional boundaries. RAC System Participants also agree to facilitate exchanges, as appropriate, and complete Off-Site GSI construction and O&M inspections, O&M, and verification. Participating Permittees are responsible for conducting the following RAC System tasks within their jurisdiction:
    - For Regulated Projects:
        - Application review and approval of Regulated Project owners interested in participating in the Contra Costa County RAC System based on the established criteria in Section XXX of XXX document.
        - Calculation and/or confirmation of metrics and compliance purchase amounts.
        - Collection of compliance purchase payments and transfer of compliance purchase payments (deducting jurisdiction-specific administrative payments) to the RAC System Administrator.
        - Enter Regulated Project participant data into RAC System Tracking Tool.
    - For Off-Site GSI Projects:
        - Approve application packages.
        - Perform plan checks.
        - Calculation and/or confirmation of metrics types and amounts.
        - Conduct construction inspections in accordance with C.3 requirements.
        - Conduct initial certification and periodic verification processes.
        - Enter Off-Site GSI Projects in RAC System Tracking Tool.
        - Perform ongoing O&M.
        - Submit O&M certification documentation to the [TBD]
    - Attend training on the implementation and updates for the RAC System

- Notify participants and the public of amendments to the RAC System Framework for a preapproved list of control measures.

- The RAC Subcommittee, which is made up of volunteer Permittee stormwater program representatives, will make decisions regarding the Contra Costa County RAC System, as defined in the Summary Report (City of San Pablo 2022). The Subcommittee is responsible for conducting the following RAC System tasks:
  - For projects funded through the CCCWP:
    - Create and update Off-Site GSI Project selection criteria for the RAC System program of projects.
    - Review and approve Off-Site GSI Project applications from compliance metric providers.
  - When requested, participate in the procurement process for contractors hired to implement projects and/or serve as a pay-for-performance or CBP3 contractor.
  - Recommend administrating agency for the selected contractors.
  - Solicit and/or review applicable cost studies for the RAC System.
  - RAC System adaptive management including (see Section 8):
    - RAC System Priorities and Technical Recommendations,
    - RAC System Strategy Meetings,
    - Regular cost updates, and
    - As-needed list of system amendments.

IV. Commitments and Actions – This section describes the specific actions each PARTY to the RAC System will be required to complete beyond the roles and responsibilities described in Section III.

In order to implement the Contra Costa County RAC System, each PARTY agrees to adopt policies, procedures, ordinances or other appropriate legal mechanisms, to allow the use of the Contra Costa County RAC System for MRP compliance.

V. Term, Updates and Modifications – This section identifies the initial term of the agreement, describes the process for renewal/update of the agreement and for amending the agreement during the agreement term.

The term of this MOU shall commence on the date that all initial duly authorized representative PARTIES execute it. This MOU shall have a term of ten (10) years.

CCCWP RAC Subcommittee and RAC System Administrator would regularly review, approve, and revise the System program of projects and the technical aspects of the Contra Costa County RAC System. After a review, changes would be made and agreed upon through the RAC Subcommittee and approved through a CCCWP Management Committee vote. Compliance metrics given to a previously approved project are protected for the lifetime of the project if it is in good standing. Any future updates or

amendments to the RAC System would be implemented as described in detail in the RAC System Report (City of San Pablo 2022).

VI. Termination – This section describes the termination of the MOU, and any associated outcomes/consequences for all the PARTIES if the MOU is terminated.

Any PARTY may terminate its participation in this MOU for future projects by giving the RAC System Administrator at least thirty (30) days' written notice. The terminating PARTY will continue to follow RAC System requirements for any projects implemented under the RAC System prior to termination and will bear the full responsibility for its compliance with the GSI and mercury/PCBs control requirements outlined in the MRP (Provisions C.3, C.11, and C.12, respectively), commencing on the date it terminates its participation.

VII. All Writings Contained Herein

This MOU contains all the terms and conditions agreed upon by the PARTIES. No other understandings, oral or otherwise, regarding the subject matter of the MOU shall be deemed to exist or to bind the PARTIES hereto.

VIII. Signatories – This section contains the signatures and dates for all PARTIES to the MOU.

IN WITNESS WHEREOF, The PARTIES have executed this MOU as of the dates shown below.

RAC System Administrator:

By: _____

Name: _____

Title: _____

Date: _____

RAC System Assessor:

By: _____

Name: _____

Title: _____

Date: _____

City/Town/County of _____:

By: _____

Name: _____

Title: _____

Date: _____

Placeholder of legal items for review by legal counsel

- Title - Should this document be a Memorandum of Understanding or an Agreement?
- Section V (Term, Updates, and Modification) - Missing Indemnification and hold harmless clause. Possible clause to consider: "Participants shall at all times indemnify and hold harmless the RAC System Administrator and RAC System Assessor, its agents, and employees on any claims, damages, personal injuries, property losses, and/or economic damages sustained by or alleged to have been sustained by any person or entity, in connection with the design or construction of the Off-Site GSI projects with this agreement."
- Section V (Term, Updates, and Modification) – Updates due to significant changes in the Permit or the RAC System. In accordance with the RAC System Report, the MOU will be subject to change based on reviews/updates to the System Program. Everything in the MOU should refer to the RAC System Report.
- Section V (Term, Updates, Modification) – Preservation of granted credits to previously approved projects. Do we need to add clarification that these changes won't affect the lifespan of metrics from a project (i.e., 'credits' are protected for some period of time)? Otherwise, the 'market' could be seen as too unreliable or volatile for participants if there is uncertainty around the value of metrics for a minimum period of time after verification. Possible clause to consider: "Compliance metrics given to a previously approved project are protected for the lifetime of project as long as it is in good standing."
- (Missing) Minimum insurance coverage and limits of liability.
- (Missing) Resolution of issue or dispute that arises.
- (Missing) Compliance with applicable laws. Possible clause to consider, "Participants shall comply with applicable Federal, State and local laws, rules and ordinances, decisions and executive orders, and shall obtain all necessary permits and licenses for any proposed work."
- (Missing) Succession. If the RAC System Administrator can no longer fulfill the obligations of this Agreement? Who should take over the oversight responsibilities pertaining to the RAC System?

Your Logo Here

Pre-Construction Off-Site GSI Project Data and Design Certification Form

This form provides Off-Site GSI Project data that are needed to identify the project and the relevant attributes that will be stored in the Regional Alternative Compliance (RAC) System Tracking Tool. This form documents all appropriate pre-construction requirements have been met for preliminary approval of compliance units generated. Data from this form will be entered into the Tracking Tool.

Project Information

Project ID: Estimated Construction Date:

Project Name:

Jurisdiction(s) where project is located: *1st jurisdiction* *2nd jurisdiction, if applicable*

Project Location (street address/intersection/segment, or other location descriptors):

Project Owner Contact Information

Project Owner:		Project Owner's Representative (if applicable):	
Name:		Name:	
Phone #:		Phone #:	
Address:		Address:	
Email:		Email:	

Project Data

Total Project Drainage Area: *(acres)* Average Annual Rainfall: *(inches)*

Total Impervious Area in Drainage Area: *(acres)*

Total Pervious Area in Drainage Area: *(acres)* Total Area Greened: 0 *(acres)*

☐ 100% designs for the project have been uploaded to the Tracking Tool.

☐ Geospatial data providing the project location and drainage area have been uploaded to the Tracking Tool.

Cost Information (Optional)

Estimated Project Capital Cost:

What is included in the capital cost?

☐ Administrative/Project Management ☐ Construction

☐ Design ☐ Other:

Multiple Benefit Information

Multiple Benefits:

☐ Habitat ☐ Urban Forestry ☐ Other:

☐ Climate Resilience ☐ Trash Reduction

☐ Reduced Local Flooding ☐ Recreational Space

☐ Reduced Heat Island Effect ☐ Brownfield Cleanup

Pre-Construction Off-Site GSI Project Data and Design Certification Form, cont.

Drainage Management Areas (DMAs)

Total Number of Project DMAs: 0

DMA #	Acres of Land Use Classifications in each DMA								Total Acres
	Source Property	Old Industrial	Old Commercial/ Transportation	Old Residential	New Industrial	New Commercial/ Transportation	New Residential	Ag/ Open Space	
Total	0	0	0	0	0	0	0	0	0

Integrated Management Practices (IMPs)

Total Number of Project IMPs: 0

DMA #	IMP Type in each DMA (enter "1" under appropriate type in each DMA)							
	Bioretention	Dry Well	Flow-through Planter	Pervious Pavement	Bioretention + Vault	Cisterns + Bioretention	Self-treating/ Self-retaining	Other
Total	0	0	0	0	0	0	0	0

Project Description (provide additional details about project attributes):

Pre-Construction Off-Site GSI Project Data and Design Certification Form, cont.

Pre-Construction Design Review

Project ID: Project Name:

Name of the Certifying Agency:

Reviewer Name:

Phone Number: Email:

☐ The Certifying Agency's design review process for compliance with C.3 regulations and standard design practice was completed and the design was approved.

☐ The Certifying Agency confirms the drainage area to the off-site project that is available for exchange is not associated with a regulated project.

Design Review Sign-Off

Approval Signature:

Date: *(month/day/year)*

Your Logo Here

Off-Site GSI Project Data Form

This form provides Off-Site GSI Project data that are needed to identify the project and the relevant attributes that will be stored in the Regional Alternative Compliance (RAC) System Tracking Tool. Data from this form will be entered into the Tracking Tool.

Project Information

Project ID: Final Construction Date:

☐ This project was added to the RAC System prior to construction via the ***Pre-construction Off-Site GSI Project Data and Design Certification Form***. Any changes based on as-builts are identified on this form.

Project Name:

Jurisdiction(s) where project is located: *1st jurisdiction* *2nd jurisdiction, if applicable*

Project Location (street address/intersection/segment, or other location descriptors):

Project Owner Contact Information

Project Owner:		Project Owner's Representative (if applicable):	
Name:		Name:	
Phone #:		Phone #:	
Address:		Address:	
Email:		Email:	

Project Data

Total Project Drainage Area: *(acres)* Average Annual Rainfall: *(inches)*

Total Impervious Area in Drainage Area: *(acres)*

Total Pervious Area in Drainage Area: *(acres)* Total Area Greened: 0 *(acres)*

☐ As-built designs for the project have been uploaded to the Tracking Tool.

☐ Geospatial data providing the project location and drainage area have been uploaded to the Tracking Tool.

☐ The project has been entered into the County AGOL System. AGOL Project ID:

Cost Information (Optional)

Project Capital Cost:

What is included in the capital cost?

☐ Administrative/Project Management ☐ Construction

☐ Design ☐ Other:

Multiple Benefit Information

Multiple Benefits:

☐ Habitat ☐ Urban Forestry ☐ Other:

☐ Climate Resilience ☐ Trash Reduction

☐ Reduced Local Flooding ☐ Recreational Space

☐ Reduced Heat Island Effect ☐ Brownfield Cleanup

Off-Site GSI Project Data Form, continued

Drainage Management Areas (DMAs)

Total Number of Project DMAs: 0

DMA #	Acres of Land Use Classifications in each DMA								Total Acres
	Source Property	Old Industrial	Old Commercial/ Transportation	Old Residential	New Industrial	New Commercial/ Transportation	New Residential	Ag/ Open Space	
Total	0	0	0	0	0	0	0	0	0

Integrated Management Practices (IMPs)

Total Number of Project IMPs: 0

DMA #	IMP Type in each DMA (enter "1" under appropriate type in each DMA)							
	Bioretention	Dry Well	Flow-through Planter	Pervious Pavement	Bioretention + Vault	Cisterns + Bioretention	Self-treating/ Self-retaining	Other
Total	0	0	0	0	0	0	0	0

Project Description (provide additional details about project attributes):

Your Logo Here

Off-Site GSI Project Post-Construction Certification Form

This form is used to document all appropriate post-construction certification requirements have been met. This form and related attachments will be uploaded as documents to the Regional Alternative Compliance (RAC) System Tracking Tool.

Section 1: Design Review

Project ID: Project Name:

Name of the Certifying Agency:

Reviewer Name:

Phone Number: Email:

☐ The Certifying Agency's design review process for compliance with C.3 regulations and standard design practice was completed and the design was approved.

☐ The Certifying Agency confirms the drainage area to the off-site project that is available for exchange is not associated with a regulated project.

Design Review Sign-Off

Approval Signature:

Date: *(month/day/year)*

Section 2: Construction Review

Name of the Certifying Agency:

Reviewer Name:

Phone Number: Email:

☐ The "Stormwater Treatment Facilities Construction Inspection Checklist" form(s) was/were completed and uploaded to the Tracking Tool.

☐ The Certifying Agency's review process was completed for all stages of construction, and the construction was approved.

Construction Review Sign-Off

Approval Signature:

Date: *(month/day/year)*

Section 3: Operation and Maintenance (O&M) Plan and Agreement

Name of Party Responsible for Ongoing O&M:

Maintenance Contact: Name:

Phone Number: Email:

☐ An approved O&M Plan was completed and uploaded to the Tracking Tool.

☐ An approved O&M agreement was completed and uploaded to the Tracking Tool.

☐ The project was added to the County Maintenance District.

MODEL STORMWATER TREATMENT FACILITIES CONSTRUCTION INSPECTION CHECKLIST

YOUR LOGO HERE

PROJECT INFORMATION

Location: _____

_____

Inspector: _____ Phone: _____

Engineer: _____ Phone: _____

PERMIT No: _____

IMPs ON-SITE: Total # of IMPs _____

☐ Bioretention Facilities ☐ Flow-through Planters

☐ Dry Wells ☐ Cisterns _____

☐ Other _____

ENGINEERING INSPECTION REQUEST LINE

[Edit instructions per local procedures] Call and leave message for assigned inspector prior to midnight on the day before the requested inspection date. Provide City Permit number, address of project, and type of inspection requested. Failure to provide this information may result in the inspection not being made. To obtain an approximate time for the inspection, call the assigned inspector between 8:00 and 8:30 am on the morning of your requested inspection.

IMP GROUP 1 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

IMP GROUP 2 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

IMP GROUP 3 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

IMP GROUP 4 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

IMP GROUP 5 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

IMP GROUP 6 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

IMP GROUP 7 includes IMP#

Layout	Excavation	Overflow Inlet/Surface Connection to SD	Underground connection to SD/outlet orifice	Drain rock/sub-drain
Soil media mix	Soil media installation	Irrigation	Planting	Engineering Final

Comments:

INSPECTION SEQUENCE REQUIREMENTS

LAYOUT inspection is required prior to beginning the excavation.

EXCAVATION inspection is required prior to backfilling any materials or pipe installation.

OVERFLOW INLET or SURFACE CONNECTION TO STORM DRAIN inspection is required prior to backfill of any materials.

CONNECTION TO STORM DRAIN or OUTLET ORIFICE inspection is required prior to backfilling IMP with any materials.

DRAIN ROCK/SUB-DRAIN inspection is required prior to soil media mix (test) and installation.

SOIL MEDIA MIX inspection (test) is required prior to soil media installation.

SOIL MEDIA INSTALLATION inspection is required prior to irrigation installation.

IRRIGATION inspection is required prior to plant materials installation.

PLANTING inspection is required prior to FINAL INSPECTION.

Items to be Inspected

Layout (Certification may be required)

- ☐ Square footage of the facility meets or exceeds minimum shown in Stormwater Control Plan.
- ☐ Site grading and grade breaks are consistent with the boundaries of the tributary Drainage Management Area(s) shown in the Stormwater Control Plan.
- ☐ Preliminary inlet elevation of the facility is low enough to receive drainage from the entire tributary Drainage Management Area(s).
- ☐ Locations and elevations of overland flow or piping, including roof leaders, from impervious areas to the facility have been laid out and any conflicts resolved.
- ☐ Rim elevation of the facility is laid out to be level all the way around, or elevations are consistent with a detailed cross-section showing location and height of interior dams.
- ☐ Locations for vaults, utility boxes, and light standards have been planned so that they will not conflict with the facility.
- ☐ Facility protected as needed from construction-phase runoff and sediment.

Excavation (Certification may be required)

- ☐ Excavation conducted with materials and techniques to minimize compaction of soils within the facility area.
- ☐ Excavation is to proper area and depth.
- ☐ Slopes or side walls protect from sloughing of native soils into the facility.
- ☐ Moisture barrier, if needed, added to protect adjacent pavement or structures.
- ☐ Native soils at bottom of excavation are ripped or loosened to promote infiltration.

Overflow Inlet/Surface Connection to Storm Drainage

- ☐ Overflow inlet is at specified elevation (typically no lower than two inches below facility rim).
- ☐ No knockouts or side inlets are in overflow riser.
- ☐ Inlet location selected to minimize surface flow velocity (near and offset from inlet recommended).
- ☐ Grating selected to exclude mulch and litter (beehive or atrium-style grates with ¼" openings recommended).
- ☐ Inlet is connected to storm drain via appropriately sized piping.
- ☐ Facility emergency overflow path designed to avoid flood damage.

Underground Connection to Storm Drain/Outlet Orifice

- ☐ Perforated pipe underdrain (PVC SDR 35 or approved equivalent) is installed with holes facing down.
- ☐ No filter fabric is installed around the underdrain.
- ☐ Perforated pipe is connected to storm drain (treatment-only) or orifice (treatment-plus-flow-control) per plans.
- ☐ Underdrain pipe is at elevation shown in plans. In facilities allowing infiltration, preferred elevation is above native soil (but low enough to be covered at least 2 inches by Class 2 perm); in sealed planter boxes or bioretention facilities with liners, preferred elevation is as near bottom as possible.
- ☐ Cleanouts are in accessible location(s) and connected via sweeps.
- ☐ Structures (arches or large diameter pipes) for additional subsurface storage are installed as shown in plans and specifications and have the specified volume.

Drain Rock/Subdrain

- ☐ Rock is installed as specified. Class 2 permeable, Caltrans specification 68-1.025 recommended, or 4"-6" pea gravel is installed at the top of the crushed rock layer.
- ☐ Rock is smoothed to a consistent top elevation. Depth and top elevation are as shown in plans, accounting for depth of soil mix and mulch to follow and required top reservoir depth.
- ☐ No filter fabric is placed between the subdrain and soil mix layers.

Soil Media Mix (Certification may be required)

- ☐ Soil media mix is as specified. Quality of mix is confirmed by delivery ticket or on-site testing as appropriate to the size and complexity of the job.
- ☐ Mix is installed in lifts not exceeding 12".
- ☐ Mix is not compacted during installation but may be wetted thoroughly to encourage consolidation.
- ☐ Mix is smoothed to a consistent top elevation. Depth of mix (18" minimum) and top elevation are as shown in plans, accounting for depth of mulch to follow and required top reservoir depth.

Irrigation

- ☐ Irrigation system is installed so it can be controlled separately from other landscaped areas. Smart irrigation controllers and drip emitters are recommended.
- ☐ Spray heads, if any, are positioned to avoid direct spray into outlet structures.

Planting

- ☐ Plants are installed consistent with the approved planting plan.
- ☐ Any trees and large shrubs are staked securely.
- ☐ No fertilizer is added. Compost tea may be used.
- ☐ No native soil or clayey material are imported into the facility with plantings.
- ☐ 1" to 2" mulch may be applied following planting. Mulch selected to avoid floating.
- ☐ Maintain final design elevation of soil mix following planting.
- ☐ Curb openings are free of obstructions.

Final Engineering Inspection

- ☐ Drainage Management Area(s) are free of construction sediment; landscaped areas are stabilized.
- ☐ Inlets are installed to provide smooth entry of runoff from adjoining pavement, have sufficient reveal (drop) from the adjoining pavement to the top of the mulch or soil mix, and are not blocked.
- ☐ Inflows from roof leaders and pipes are connected and operable.
- ☐ Temporary flow diversions are removed.
- ☐ Rock or other energy dissipation at piped or surface inlets is adequate.
- ☐ Overflow outlets are configured to allow the facility to flood and fill to near rim before overflow.
- ☐ Plantings are healthy and becoming established.
- ☐ Irrigation is operable.
- ☐ Facility drains rapidly; no surface ponding is evident.
- ☐ Any accumulated construction debris, trash, or sediment is removed from facility.

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- ☑ Temporary flow diversions are removed.
- ☑ Rock or other energy dissipation at piped or surface inlets is adequate.
- ☑ Overflow outlets are configured to allow the facility to flood and fill to near rim before overflow.
- ☑ Plantings are healthy and becoming established.
- ☑ Irrigation is operable.
- ☑ Facility drains rapidly; no surface ponding is evident.
- ☑ Any accumulated construction debris, trash, or sediment is removed from facility.

Instructions to preparer:

This template provides instructions, format, organization, and some recommended content for your O&M Plan.

Instructions and notes in yellow highlight should be deleted prior to submittal.

Replace all information in [brackets] with your project-specific information.

Some of the recommended content is for bioretention facilities. For other facility types, this content should be replaced with content appropriate to your project facilities.

Your O&M Plan and attachments should be submitted in .pdf format. Check with staff for submittal instructions.

Write the Plan in the present tense as if it is already constructed and all agreements are executed and the owner is reading the document.

[TEMPLATE FOR]
STORMWATER FACILITIES OPERATION AND MAINTENANCE PLAN
for
[PROJECT NAME]
[PROJECT NUMBER (subdivision number, or consult with staff)]

[date]
[revision date]

[Name of Owner]
[Owner's Representative and Contact Information]

prepared by:

[Preparer's Name]
[Preparer's Contact Information]

TABLE OF CONTENTS

Tables

Figures

Attachments

Acronyms and Abbreviations

C.3	Provision C.3 in the Municipal Regional Stormwater Permit issued by the California Regional Water Quality Control Board for the San Francisco Bay Region
IMP	Integrated Management Practice
O&M Plan	Operations and Maintenance Plan

This Stormwater Facilities Operation and Maintenance Plan was prepared using the template dated February 2018.

I. INSPECTION AND MAINTENANCE LOG

Facility Name	
Address	
Begin Date	End Date

Date	BMP ID#	BMP Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

Instructions: Record all inspections and maintenance for all treatment BMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary.

- BMP ID# — Always use ID# from the Operation and Maintenance Manual.
- Inspected by — Note all inspections and maintenance on this form.
- Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.

- Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.
- Comments and actions taken — Describe any maintenance done and need for follow-up.

II. UPDATE TO DESIGNATION OF RESPONSIBLE INDIVIDUALS

** **Use this form to update the plan when responsible individuals change**. ** Date Completed	
Facility Name	
Facility Address	
Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Corporate Officer (authorized to execute contracts with the City, Town, or County)	
Name:	Title or Position:
Address:	
Telephone:	Alternate Telephone:
Email:	

III. UPDATES, REVISIONS, AND ERRATA

Date	Num.	Updates, Revisions, or Errata Title	Description/Purpose	By (full name):

I. INTRODUCTION

This plan addresses operation and maintenance of facilities constructed as part of the following development project:

[project name].

The final, approved Stormwater Control Plan for this project is in Appendix A.

I.A. Background

Suggested language to include: This Stormwater Facilities Operation and Maintenance Plan (O&M Plan) is for facilities (and pervious pavement systems) constructed as part of the development project referenced above. Construction of these facilities was required by Provision C.3 in the Municipal Regional Stormwater Permit issued by the California Regional Water Quality Control Board for the San Francisco Bay Region. Provision C.3. also requires the [Agency] to verify ongoing operation and maintenance of stormwater treatment and hydromodification management facilities, and certain pervious pavement installations.

I.B. Associated Agreements

Suggested language to include: This O&M Plan is referenced in an O&M Agreement between the property owner and the [Agency]. The agreement, [reference], grants the [Agency] access to the property to conduct inspections and, if needed, to perform maintenance on the facilities at the owner's expense. The agreement also grants access for inspections to the Contra Costa Mosquito and Vector Control District (CCMVCD).

As provided in the O&M Agreement, this O&M Plan may be modified, but only with the review and consent of the [Agency] [Public Works Director/City Engineer]. The official O&M Plan is the version which is on file at the [Agency] Public Works Department. Any modifications made to the O&M Plan with the consent of the [Public Works Director/City Engineer] must be filed at the Public Works Department.

I.C. Funding for and Organization of Facility Operation and Maintenance

Describe how facility operation and maintenance is funded on an ongoing basis in the present tense as if it is already constructed and all agreements are executed. Include descriptions and references for agreements or associations among homeowners or other property owners, budget line items, sources and expenditures of operating funds and reserve funds, administration, and oversight. Describe the personnel positions or contracts used to conduct maintenance, and oversight of these personnel or contracts. Include or attach an organization chart.

I.D. Site Description

Describe site location in the present tense as if it is already constructed. Include the size, topography, abutting streets and properties, structures, paved areas, underlying soils, and grading. Describe the number and type of stormwater facilities and the routing of treated runoff and untreated overflow to the public drainage system.

II. DESIGNATION AND TRAINING OF RESPONSIBLE INDIVIDUALS

II.A. Designated Contact for Operation and Maintenance

[name, title or position]
[address]
[telephone and email]

II.B. Off-Hours or Emergency Contact

[name, title or position]
[address]
[telephone and email]

II.C. Corporate Officer (authorized to execute agreements with the County)

[name, title or position]
[address]
[telephone and email]

II.D. Initial Training of Responsible Individuals

Suggested language to include: Following completion of construction, the bioretention facilities will be maintained by the contractor for two years, except for routine policing for trash, which will be done by the owner's and lessee's personnel. During this 2-year period, the owner's landscape maintenance crew will coordinate to meet with the contractor's personnel on-site during maintenance. At these times, the contractor's personnel will demonstrate proper maintenance procedures.

II.E. Ongoing Training of Responsible Individuals

Describe a plan for ongoing oversight and training for maintenance personnel.

III. FACILITIES TO BE MAINTAINED

III.A. Facility Descriptions

State the number and type(s) of facilities. Describe their common elements. For bioretention facilities, include in the description structural elements, media layers and depth of each, underdrain material, overflow structure, depth of surface reservoir, plantings (including species), irrigation system, and signage (if any). Include an explanatory sketch or schematic such as the one below. Then, include specific descriptions of each facility in the subsections below.

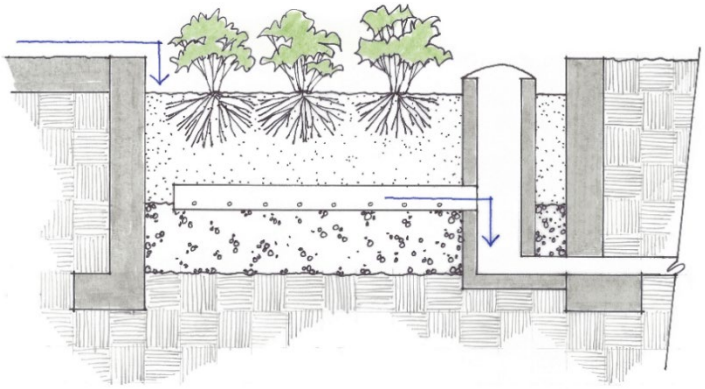

Figure [x]. Bioretention Cross-Section (schematic)

III.A.1. [Bioretention Facility #1]

Reference the Stormwater Control Plan Exhibit. Reference and describe the Drainage Management Areas (DMAs) from which the facility receives drainage, including the square footage, surface type, and features of each DMA. Describe how flow is routed from the DMA to the facility (piped, sheet flow, or curb inlet). Describe the connections of the underdrain and overflow structure. Describe any specific or special features of the facility.

III.A.2. [Bioretention Facility #2]

III.A.3. [Bioretention Facility #3]

IV. MAINTENANCE ACTIVITIES

IV.A. General Maintenance Rules

Suggested language to include for bioretention facilities: At no time will synthetic pesticides or fertilizers be applied, nor will any soil amendments, other than aged compost mulch or sand/compost mix, be introduced. The top of soil surface will be maintained at or near the design elevation throughout. Irrigation systems will be maintained to conserve water while maintaining plant health.

Although it is unlikely to be needed, if plants are not thriving compost tea may be applied at a recommended rate of 5 gallons mixed with 15 gallons of water per acre, up to once per year between March and June. Compost tea will not be applied when temperatures are below 50°F or above 90°F or when rain is forecast within the next 48 hours.

The following may be applied for pest control if needed:

- Beneficial nematodes
- Safer® products

- Neem oil

Plants may need to be replaced with the following mix as specified by the landscape architect [list species] or with similar plantings appropriate for the unique conditions.

IV.B. Maintenance Schedule

Suggested language to include for bioretention facilities:

The [state number] [bioretention] facilities will be maintained on the following schedule at a minimum:

IV.B.1. Routine Activities

Suggested language to include for bioretention facilities: The facilities will be examined [daily for commercial; weekly for residential] for visible trash, and trash will be removed. Any graffiti, vandalism, or other damage will be noted and addressed within 48 hours.

The planted areas will be weeded by hand approximately monthly. At this time, plants will be inspected for health and the irrigation system will be turned on manually and checked for any leaks or broken lines, misdirected spray patterns etc. Any dead plants will be replaced.

IV.B.2. Following Significant Rain Events

Suggested language to include for bioretention facilities: A significant rain event will be considered to be one that produces approximately a half-inch or more rainfall in a 24-hour period. Within 24 hours after each such event, the following will be conducted:

- The surface of the facility will be observed to confirm there is no ponding.
- Inlets will be inspected, and any accumulations of trash or debris will be removed. Any erosion at inlets should be restored to grade.
- The surface of the mulch layer will be inspected for movement of material. Mulch will be replaced and raked smooth if needed.
- Outlet structure will be inspected for any obstructions to assure that mulch is not washed out.

IV.B.3. Prior to the Start of the Rainy Season

Suggested language to include for bioretention facilities: In September of each year, facility inlets and outlets [including flow-control orifices, if any] will be inspected to confirm there is no accumulation of debris that would block flow. Stormwater should drain freely into the bioretention facilities. If not previously addressed during monthly maintenance, any growth and spread of plantings that blocks inlets or the movement of runoff across the surface of the facility will be cut back or removed.

IV.B.4. Annually During Winter

Suggested language to include for bioretention facilities: Once, in December – February of each year, vegetation will be cut back as needed, debris removed, and plants and mulch replaced as needed. The concrete work will be inspected for damage. The elevation of the top of soil and mulch layer will be confirmed to be consistent with the 6-inch reservoir depth.

An Agreement for the Owner of a Single Parcel to Operate and Maintain a Stormwater Management Facility
Instruction Sheet for this Agreement

This agreement is designed to be used when development is occurring on a single parcel of property, and stormwater management facilities are required to be constructed on that property. (This agreement can also be used for a subdivision where the stormwater management facility is located on one of the resident's privately owned lots and the stormwater management facility will be maintained by the owner of that lot.)

1. Fill in the name of your jurisdiction in the appropriate blanks on the cover page, in the opening paragraph of the agreement, in the definition of NPDES Permit, in Section 1, and on the signature page. Fill in the appropriate citation to your jurisdictions stormwater ordinance in the definition of Ordinance.

2. Fill in the name of the property owner in the blank on the cover page, in the opening paragraph of the Agreement, in the definition of Property Owner (twice) and on the signature page. Get the name from a title report. If the owner is a corporation, two signatures of corporate officers are required. An incorrect name may result in the agreement not being indexed properly by the County Recorder. Also insert the name of the project and the assessor's parcel number on the cover page.

3. Insert the street address of the project in the definition of Property. (If the stormwater management facility is located on a newly created lot that does not have a street address, give the lot and subdivision number, e.g. "Lot _ of Subdivision ____.")

4. Insert the name of the preparer and the date of approval of the Stormwater Operations and Maintenance Plan in the definition of Plan.

5. Insert the name of the adjoining public street in Recital B and Section 6. This is very important because for this Agreement to be binding on successors to the present owner, the law requires that the property "benefited" by the Agreement be specified in the Agreement.

6. Insert the month of the year you want the annual inspection to occur in Section 2.

7. Add the legal description of the property to Exhibit A. Again this is very important. For the Agreement to be binding on successors they must have the constructive notice of the Agreement that is provided by proper recording of the Agreement. Take the legal description from the title report and proof-read it. It is this legal description that gives notice to successors, not the assessor's parcel number you inserted on the cover page.

11/7/2007
Recording Requested By:
CITY OF _____

Return to: **CITY OF _____**
City Clerk
P.O. Box
_____, CA 945

Document Title

CITY OF _____

COVENANT RUNNING WITH THE LAND,
STORMWATER MANAGEMENT FACILITY OPERATIONS
AND MAINTENANCE AGREEMENT, AND RIGHT OF ENTRY
(Single Parcel)

PROJECT: _____

OWNERS NAMES: _____

ASSESSOR'S PARCEL NUMBER: _____

COVENANT RUNNING WITH THE LAND, STORMWATER MANAGEMENT FACILITIES OPERATION AND MAINTENANCE AGREEMENT, AND RIGHT OF ENTRY

This Covenant Running with the Land, Stormwater Management Facilities Operation and Maintenance Agreement and Right of Entry ("Agreement") is made and entered into this _____ day of _____, 20___, by and between _____, (hereinafter referred to as "Property Owner") and The City of _____, a municipal corporation ("City").

The following terms used in this Agreement shall have the meanings specified below:

DEFINITIONS

Maintain: The term "**Maintain**" or "**Maintained**" shall mean taking all actions reasonably necessary to keep the Stormwater Facility in first class operation, condition and repair, which actions include but are not limited to regular inspections, painting, cleaning, maintenance, refinishing, repairing, replacing and reconstructing the Stormwater Facility, and in the case of landscaping, plant replacement, mulch replacement, irrigating, trimming, mowing, and fertilizing the landscaping. The term shall also include the routine maintenance, and the annual inspection and reporting described in the Stormwater Control Operation and Maintenance Plan, and the payment of any applicable City fees.

NPDES Permit: The term "**NPDES Permit**" shall mean the San Francisco Bay Regional Water Quality Control Board's National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0029912 (issued to the City of _____) as amended, and as may be superseded by subsequent NPDES permits that are reissued from time to time.

Ordinance: The term "**Ordinance**" shall mean Chapter __ of Title _ of the _____ Municipal Code (Stormwater Management and Discharge Control), as may be amended from time to time.

Property Owner: The term "**Property Owner**" and "**Property Owners**" shall mean _____ and all heirs, successors, executors, administrators and assigns of _____ in the Property, it being the intent of the parties hereto that the obligations undertaken in this Agreement, as provided in Civil Code section 1468, run with the Property described in Exhibit A and constitute a lien against the Property.

Property: The term "**Property**" shall mean that certain real property located at __[insert street address]__, and more particularly described in Exhibit A which is attached hereto and hereby incorporated herein by reference.

Plan: The term "**Plan**" or "**Operation and Maintenance Plan**" means the City-approved Stormwater Control Operation and Maintenance Plan prepared by _____ and approved by the City Engineer in writing, which may be subsequently modified from time to time with City Engineer's written approval.

Stormwater Facility: The term "**Stormwater Facility**" means the permanent stormwater management facilities located and constructed on the Property.

RECITALS

This Agreement is made and entered into with reference to the following facts:

A. The Property Owner is the owner of the real property more particularly described on the attached Exhibit A.

B. The City is the owner of _____ Street and its storm drains that are adjacent to the Property, and the City is required to ensure that stormwater run-off from the Property into its storm drains meets the requirements of its NPDES Permit.

C. To meet its obligations under its NPDES Permit the City has required the Property Owner to construct the Stormwater Facility on the Property.

D. To meet its obligations under its NPDES Permit the City has approved the Property Owner's Operation and Maintenance Plan for the Stormwater Facility.

E. To meet its obligations under its NPDES Permit the City's Ordinance requires proper operation and maintenance in perpetuity of the Stormwater Facility constructed on the Property.

F. The Plan includes an annual inspection and reporting requirement for the Stormwater Facility constructed on the Property.

G. This Agreement memorializes the Property Owner's maintenance, operations, and inspection obligations under the City's Ordinance, the City's NPDES Permit and the Plan.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

SECTION 1

Responsibility for Operation and Maintenance: No portion of the Stormwater Facility may be altered, in any way, by the Property Owner without the prior written consent of the City Engineer of the City of _____. The Property Owner shall Maintain the Stormwater Facility in first class operating condition, and in compliance with all applicable state, county and city laws and regulations. Applicable regulations include, but are not limited to, the City-approved Stormwater Control Operation and Maintenance Plan, and the provisions of the Ordinance, as they may be amended from time to time.

The Property Owner shall engage a landscape contractor or other licensed contractor to Maintain the Stormwater Facility. The City Engineer, in her or his sole absolute discretion, may approve an alternate

method for the maintenance of the Stormwater Facility. The City Engineer, also in her or his sole absolute discretion, may revoke the approval of a previously approved alternate method for the maintenance of the Stormwater Facility.

SECTION 2

Inspection by Property Owner: The Property Owner shall cause its contractor to conduct annual inspections during the month of_____ of each year. The annual inspection report shall include completion of the checklist described in the approved Operation and Maintenance Plan. The Property Owner or its contractor must submit the inspection report to the City Engineer within 30 days after the annual inspection. A Management and/or Inspection fee established in the City's standard fee schedule shall accompany the annual inspection report.

SECTION 3

Right of Entry and Stormwater Facility Inspection by the City: The Property Owner hereby grants permission to the City, its authorized agents and employees, and the Central Contra Costa Sanitary District, the Contra Costa County Fire Protection District, County Environmental Health Department, the Contra Costa Mosquito and Vector Control District, and the Regional Water Quality Control Board to enter the portion of the Property where the Stormwater Facility is located, and to inspect the Stormwater Facility whenever any of the forgoing entities deems necessary to enforce provisions of the City's Ordinance. These entities may enter the premises at any reasonable time to inspect the Stormwater Facility's maintenance and operation, to inspect and copy records related to compliance with stormwater regulations, and to collect samples and take measurements. Whenever possible, these entities will provide notice prior to entry.

SECTION 4

Failure to Perform Required Stormwater Facility Repairs or Maintenance by the Property Owner: If the Property Owner or its successors fails to Maintain the Stormwater Facility in good working order and in accordance with the approved Plan and the City's Ordinance, the City, with prior notice, may enter the Property to return the Stormwater Facility to good working order. The City is under no obligation to Maintain or repair the Stormwater Facility, and this Agreement may not be construed to impose any such obligation on the City. If the City, under this section takes any action to return the Stormwater Facility to good working order, the Property Owner shall reimburse the City for all the costs incurred by the City, including administrative costs. The City will provide the Property Owner with an itemized invoice of the City's costs and the Property Owner will have 30 days to pay the invoice. If the Property Owner fails to pay the invoice within 30 days, the City may secure a lien against the real property of the Property Owner in the amount of such costs. In addition the City may make the cost of abatement of the nuisance caused by the failure to maintain the Stormwater Facility a special assessment against the Property that may be collected at the same time and in the same manner as ordinary municipal taxes are collected as provided in Government Code section 38773.5. This Section 4 does not prohibit the City from pursuing other legal recourse against the Property Owner.

SECTION 5

Indemnity: The Property Owner agrees to defend, indemnify and holds harmless the City, its officials, employees and its authorized agents from any and all damages, accidents, casualties, occurrences, claims, penalties or fines which might arise or be asserted against the City and which are in any way connected with the construction, operation, presence, existence or maintenance of the Stormwater Facility by the Property Owner, or from any personal injury or property damage that may result from the City or other public entities entering the Property under Section 3 or 4.

SECTION 6

Successors and Assigns: The covenants of the Property Owner set forth in numbered Sections 1 through 5 above shall run with the land, and the burdens thereof shall be binding upon each and every part of the Property and upon the Property Owner, its successors and assigns in ownership (or any interest therein), for the benefit of _____ Street and its storm drains and each and every part thereof and said covenants shall inure to the benefit of and be enforceable by the City, its successors and assigns in ownership of each and every part of the Street and storm drains.

SECTION 7

Severability: Invalidation of any one of the provisions of this Agreement shall in no way effect any other provisions and all other provisions shall remain in full force and effect.

Recommended for approval: City of _____:

_____ _____
City Engineer Mayor

Reviewed by: Attest:

_____ _____
City Attorney City Clerk

Property Owners:

_____
Owner's Name

_____

Owner's Name

Attachments: Acknowledgements
Exhibit A

ALL PURPOSE ACKNOWLEDGMENT

State of California)
) s.s.
County of _____)

On _____, before me,
_____, personally appeared
_____,
_____ personally known to me;
_____ or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal. (SEAL)

_____
Signature of Notary Public

CAPACITY CLAIMED BY SIGNER:

Though statute does not require the notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

_____ Individual(s)
_____ Corporate Officer(s) Titles _____ and _____
_____ Partner(s) _____ Limited _____ General
_____ Attorney-in-Fact
_____ Trustee(s)
_____ Guardian/Conservator
_____ Other : _____

Signer is representing: _____

ATTENTION NOTARY: Although the information requested below is optional, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or type of document _____
Number of pages: _____ Date of document: _____
Signer(s) other than named above: _____

THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED ABOVE

EXHIBIT A

Legal description

Stormwater Facility Operation and Maintenance Inspection Report

General	
SITE NAME	ADDRESS
DATE AND TIME OF VISIT	REASON FOR INSPECTION (e.g. routine/annual, follow-up, or response to complaint)
Review of Stormwater Control Operation and Maintenance Plan	
Was the on-site copy of the Plan available on request? ❑ YES ❑ NO	SECTIONS OUT OF DATE AND UPDATES NEEDED: ❑ Owner contact Information ❑ Information on changes to facilities ❑ Records of previous inspections ❑ Other:
Date of last update to Plan: ____/_____/_____	
MAINTENANCE LOGS: ❑ Consistent with maintenance schedule in Plan. ❑ Not consistent with maintenance schedule (note exceptions):	
Results of Site Inspection	
Overall condition of site and any exceptional circumstances:	
LIST STORMWATER FACILITIES INSPECTED (Use designations/IMP #s from Plan) _____ _____ _____ _____ _____ _____ _____ _____ _____	ITEMS INSPECTED AND EXCEPTIONS NOTED:
Compliance Summary and Recommended Follow-up	
SITE STATUS: ❑ In compliance—no corrective actions required. ❑ In compliance—Implement corrective actions. ❑ Not in compliance—Correct and reinspect.	FOLLOW-UP PLAN AND SCHEDULE: INSPECTOR: DATE:

Your Logo Here

Off-Site GSI Project O&M Verification Form

This form provides summary information to document the completion of regularly scheduled O&M verification inspections.This form will be uploaded as a document to the Tracking Tool.

Project ID:

Project Location:

O&M Verifying Agency:

O&M Verification Inspection Frequency: *(e.g., annual, biannual, etc.)*

Inspection Completed by *(Name of Inspector, Agency):*

Inspection Date: *(month/day/year)*

☐ O&M Inspection Report form(s) was/were completed.

☐ O&M inspection documentation and photos are complete and available upon request.

Location of O&M Inspection Report data:

Select the option(s) that apply:

☐ All project IMPs were inspected and O&M is acceptable; no deficiencies identified.

OR

☐ All project IMPs were inspected and O&M deficiencies were identified.

☐ All deficiencies identified were corrected.

Date all correction(s) completed: *(month,year)*

Appendix C-11
Modified Stormwater Control Plan
for the Contra Costa County Alternative Compliance System
[additions in red text]

STORMWATER CONTROL PLAN
for
[NAME OF PROJECT]

[date]

[This template is to be used in conjunction with the instructions, criteria, and minimum requirements in the Contra Costa Clean Water Program *Stormwater C.3 Guidebook, 7th Edition.*

The contents and level of detail required for a Stormwater Control Plan varies with project characteristics. Check with local staff regarding requirements for your project.

Check the Contra Costa Clean Water Program website at http://www.cccleanwater.org/new-development-c-3/ **for new information and updates to the Guidebook and this template.]**

[Name of Owner]
[Owner's Representative and Contact Information]

prepared by:

[Preparer's Name]
[Preparer's Contact Information]

TABLE OF CONTENTS

Tables

Figures

Attachments

Stormwater Control Plan Exhibit

IMP Sizing Calculator Output

Appendix

HM Compliance [if applicable]

This Stormwater Control Plan was prepared using the template dated February 2018.

I. PROJECT DATA [Complete the following table and include in Stormwater Control Plan.]

Table 1. Project Data

Project Name/Number	
Application Submittal Date	[to be verified by municipal staff per 14 CCR §15060]
Project Location	[Provide both APN and street address if available]
Name of Developer	
Project Phase No.	[If project is being constructed in phases, indicate the phase number. If not, enter "NA"]
Project Type and Description	[Example entries: "5-story office building," "Residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums," "100-unit, 2-story shopping mall," "mixed use retail and residential development (apartments)", "Industrial warehouse."]
Project Watershed	[Request from municipal staff]
Total Project Site Area (acres)	
Total Area of Land Disturbed (acres)	
Total New Impervious Surface Area (sq. ft.)	
Total Replaced Impervious Surface Area	[See instructions on p. 14 of the *Guidebook* 7th Edition.]
Total Pre-Project Impervious Surface Area	
Total Post-Project Impervious Surface Area	
50% Rule[*]	[Applies or Doesn't Apply]
Project Density	[State DU/Acre and/or Floor Area Ratio. See definitions on p. 46 of the *Guidebook* 7th Edition.]
Applicable Special Project Categories [Complete even if all treatment is LID]	[State A, B, C, or none. If "C", state basis for location credits, density, and parking credits.]
Percent LID and non-LID treatment on-site and percent LID treatment off-site if applicable	[State totals for project and provide details under "Documentation of Drainage Design."]
HM Compliance [†]	[State "applies," or state "exempt" and explain reason for exemption. See page 9 of the *Guidebook* 7th Edition.]

[*50% rule applies if:
Total Replaced Impervious Surface Area > 0.5 x Pre-Project Impervious Surface Area]

[†HM required (unless project meets one of the exemptions on *Guidebook* p. 9) if:
(Total New Impervious Surface Area + Total Replaced Impervious Surface Area) ≥ 1 acre]

II. SETTING

[See instructions on pp. 14-15 of the *Guidebook*.]

II.A. Project Location and Description

[Include site location, division of parcels, planned land uses, zoning, setback and open space requirements, project phasing, number of residential units or square footage of office or retail, parking requirements, neighborhood character, project design objectives (for example LEED certification), other notable project characteristics. Include a vicinity map.]

II.B. Existing Site Features and Conditions

[Include site size, shape, and topography. Hydrologic features, including any contiguous natural areas, wetlands, watercourses, seeps, or springs. Existing land uses. Soil types and hydrologic soil groups, depth to groundwater, vegetative cover, and impervious areas, if any. Existing drainage for site and nearby areas, including location of municipal storm drains.]

II.C. Opportunities and Constraints for Stormwater Control

[Examples of constraints: impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, density/high-intensity land use, heavy pedestrian or vehicular traffic, utility locations, safety concerns.]

[Examples of opportunities: Existing natural areas, low areas, oddly configured or otherwise unbuildable areas, easements and required landscape amenities including open space and buffers that might be used for bioretention facilities, and differences in elevation, which can provide needed hydraulic head.]

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

[See *Guidebook* pp. 16 and 24-29. Review each of the strategies and describe here how each has been incorporated into your project. Not every strategy applies to every project; if a strategy doesn't apply, state the reason.]

III.A. Optimization of Site Layout

[In a narrative, address the points in each of the subheadings to the level of detail appropriate for your project. Subheadings may be used or omitted.]

III.A.1. Limitation of development envelope

III.A.2. Preservation of natural drainage features

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

III.A.4. Minimization of imperviousness

III.A.5. Use of drainage as a design element

III.B. Use of Permeable Pavements

III.C. Dispersal of Runoff to Pervious Areas

III.D. Bioretention or other Integrated Management Practices

[See the guidance, *Guidebook* pp. 27-29, for siting and designing bioretention facilities. Describe how the facilities in your project have been designed to be consistent with this guidance. In addition, ensure your stormwater control design is fully coordinated with the site plan, grading plan, and landscaping plan being proposed for the site. See *Guidebook* p. 43.]

[If applicable, indicate whether the project will utilize the alternative compliance option to construct LID treatment off-site, or will utilize the Contra Costa County Alternative Compliance System in-lieu fee option, in lieu of some or all on-site treatment.]

IV. DOCUMENTATION OF DRAINAGE DESIGN

[If utilizing the Contra Costa County Alternative Compliance System in-lieu fee option, skip to Section IV.D.]

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table x. Drainage Management Areas

DMA Name	*Area (SF)*	*Surface Type/Description*	*DMA Type/Drains to*

IV.A.2. Drainage Management Area Descriptions

DMA [name], totaling x,xxx square feet, drains [description of area]. DMA [name] drains to [Self-Retaining DMA name or IMP name]. [Describe notable or exceptional characteristics or conditions.]

DMA [name], totaling x,xxx square feet, drains [description of area]. DMA [name] drains to [Self-Retaining DMA name or IMP name]. [Describe notable or exceptional characteristics or conditions.]

DMA [name], totaling x,xxx square feet, drains [description of area]. DMA [name] drains to [Self-Retaining DMA name or IMP name]. [Describe notable or exceptional characteristics or conditions.]

DMA [name], totaling x,xxx square feet, drains [description of area]. DMA [name] drains to [Self-Retaining DMA name or IMP name]. [Describe notable or exceptional characteristics or conditions.]

[For DMAs draining to non-LID treatment systems, include a description of the uses of all impervious paved areas, and for landscaped areas, a description of the technical constraints preventing their use as LID IMPs. Also include a narrative discussion of the infeasibility of offsite treatment.]

IV.B. Integrated Management Practice Descriptions

[Include a description of the facilities, including design criteria. See the design sheets in *Guidebook* Chapter 4. Describe any special or notable features or design characteristics. Include a sketch showing key elevations if necessary to demonstrate sufficient hydraulic head.]

IV.B.1. *Areas Draining to Non-LID Treatment* ["Special Projects" only—See Table 3-8, p. 46]

Table x. Areas Draining to Non-LID Treatment

DMA Name	*Area (square feet)*	*Non-LID Treatment System*	*Minimum Design Criteria Referenced*

IV.C. Tabulation and Sizing Calculations

[Attach and reference output from the IMP Sizing Calculator.]

IV.D. Description of Off-Site GSI Project (if Applicable)

[If the Contra Costa County Alternative Compliance System in-lieu fee option will be used to provide treatment at an Off-Site GSI Project, the following additional forms must be provided[1]:

- *Off-Site GSI Project Data Form* for a constructed project being used for alternative compliance; OR *Pre-Construction Off-Site GSI Project Data and Design Certification Form* for a fully designed but not yet constructed project being used for alternative compliance;
- *Alternative Compliance Exchange Documentation Form* authorizing the exchange and the payment of in-lieu fees and annual O&M payments.

[1] Forms describing the Off-Site GSI Project and documenting the exchange authorized by the Contra Costa County Alternative Compliance System are available from the Contra Costa County System Tracking Tool at [provide link].

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

V.B. Source Control Table

Table x. Source Controls

[See the instructions on page 16 of the Guidebook and the checklist in Appendix D.]

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

VI. STORMWATER FACILITY MAINTENANCE

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

[Include (1) a commitment to execute any necessary agreements and/or annex into a fee mechanism, per local requirements, and (2) a statement accepting responsibility for operation and maintenance of facilities until that responsibility is formally transferred.]

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

[For guidance on what to include in this section, see the Operation and Maintenance Fact Sheet at http://www.cccleanwater.org/stormwater-c-3-guidebook/]

VII. CONSTRUCTION PLAN C.3 CHECKLIST

[See the instructions on page 18 of the Guidebook. Number and list each measure or BMP you have specified in your Stormwater Control Plan in Columns 1 and 2 of the table. Leave Column 3 blank. When you submit grading and improvement plans for engineering review, duplicate this table on those plans, with Column 3 also completed. Also, before completing your Plan and accompanying exhibit, perform another check to ensure your stormwater control design is fully coordinated with the site plan, grading plan, and landscaping plan being proposed for the site. Identify any conflicts with codes and requirements, or other obstacles to implementing the Plan as submitted. See p. 43 of the *Guidebook*.]

Table x. Construction Plan C.3 Checklist

Stormwater Control	*BMP Description*	*See Plan Sheet #s*

Plan
Page #

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2015-0049.

[Check with local staff regarding other certification requirements.]

_____

By

_____

Print Name

Your Logo Here

Alternative Compliance Exchange Documentation Form

This form documents a Regulated Project's use of the alternative (off-site) compliance option provided by the Contra Costa County Regional Alternative Compliance (RAC) System, and summarizes the details of the Regulated Project's exchange of in-lieu fees for the Off-Site GSI Project's Equivalent Acres Greened with Net Environmental Benefit. This form will be submitted to the Agency reviewing the Regulated Project for C.3 compliance as part of the Regulated Project's Stormwater Control Plan, and uploaded as a document to the Tracking Tool.

Regulated Project Information

Regulated Project ID: Jurisdiction:

Regulated Project Address:

Project Owner:

Phone #: Email:

Annual Average Rainfall: *(inches)* Non-Industrial Land Use: *(acres)*

New Industrial Land Use: *(acres)*

Total Impervious Area in Drainage Area (IMP_{RP}): *(acres)*

Total Pervious Area in Drainage Area (PER_{RP}): *(acres)*

Runoff Generating Acres for which the Regulated Project owner is seeking alternative compliance (RGA_{RP}) = IMP_{RP} + (0.10 * PER_{RP}): 0 *(acres)*

Off-Site GSI Project Information

Project ID: Project Name:

Project Location:

☐ Off-site GSI project is not yet constructed at the time of this exchange.

Net Environmental Benefit (NEB) Ratio 1.1

*NEB = 1.1 unless purchasing compliance metrics that are treating old industrial land use; for off-site GSI projects is treating old industrial land use, NEB Ratio = 1.0 for Equivalent Acres Greened units treating old industrial land use.

Annual Average Rainfall: *(inches)*

☐ Off-site GSI project is associated with higher pollutant loading than the regulated project. (check this box if NEB = 1.0

Equivalent Acres Greened Available for Exchange: *(acres)*

Date Available for Exchange: *(month/day/year)*

Equivalent Acres Greened Unit Cost: *($/acre)*

Jurisdiction's Administrative Fees: *($)*

Clean Water Program System Administrative Fees: *($)*

Annual O&M Fee Unit Cost: *($/acre/year)*

Alternative Compliance Exchange Form, continued

Exchange Information

Exchange ID: _____ Exchange Date: _____ (month/day/year)

Regulated Project Rainfall Ratio ($Ratio_{Rainfall}$): 1.0 *See attached Rainfall Ratio Matrix to determine this value.

Regulated Project Pollutant Ratio ($Ratio_{Pollutant}$): 1.0 *See attached Pollutant Ratios Matrix to determine this value.

Required Equivalent Acres Greened for Off-Site Compliance = (RGA_{RP} x $Ratio_{Rainfall}$ x $Ratio_{Pollutant}$): 0 *(acres)*

Quantity of Equivalent Acres Greened (EAG) Purchased: _____ *(acres)*

Total In-lieu Fee = (EAG x NEB Ratio x EAG Unit Cost) + Admin Fees: 0 *($)*

Annual O&M Fee (to be paid annually by the Regulated Project Owner): 0 *($/year)*

☐ A copy of this Exchange Form to be provided to the County Maintenance District to allow for ongoing O&M fee assessments.

Confirmation of Completion of the Exchange

Confirming Agency (Jurisdiction of Regulated Project): _____

Confirming Agency Representative: _____

Phone Number and Email: _____

☐ In-lieu fee was paid in full. Date Paid: _____ *(month/day/year)*

☐ This exchange completes all requirements for the Regulated Project's off-site compliance as part of the Contra Costa County Regional Alternative Compliance (RAC) System.

☐ Additional exchange(s) are required for the Regulated Project to achieve off-site compliance.
All additional Exchange ID(s) are listed here:

_____

Exchange Completion Sign-Off

Approval Signature: _____

Date: _____ *(month/day/year)*

Alternative Compliance Exchange Form, continued

Rainfall Ratio Matrix for Rainfall Zones Across the County

Exchange Ratio Matrix	Equivalent Acres Greened Annual Average Rainfall Zone[1] (inches)																				
Regulated Project Annual Average Rainfall Zone (inches)	≤13	≤14	≤15	≤16	≤17	≤18	≤19	≤20	≤21	≤22	≤23	≤24	≤25	≤26	≤27	≤28	≤29	≤30	≤31	≤32	≤33
≤13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤14	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤15	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤16	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤17	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤18	1.4	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤19	1.5	1.4	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤20	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤21	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤22	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤23	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤24	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤25	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤26	2.0	1.9	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤27	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤28	2.2	2.0	1.9	1.8	1.6	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
≤29	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0
≤30	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0
≤31	2.4	2.2	2.1	1.9	1.8	1.7	1.6	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	1.0
≤32	2.5	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0
≤33	2.5	2.4	2.2	2.1	1.9	1.8	1.7	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0

Alternative Compliance Exchange Form, continued

Pollutant Ratio Matrix for Identified Land Use Categories

Exchange Ratio Matrix		Off-Site Project Land Use Category			
		Residential, Commercial, or Institutional [1]	Transportation [2]	New Industrial	Old Industrial and Source Areas
Regulated Project Land Use Category	Residential, Commercial, or Institutional [1]	1.0	1.0	1.0	1.0 [3]
	Transportation [2]	1.3	1.0	1.0	1.0 [3]
	Industrial	1.8	1.4	1.0	1.0 [3]

[1] Includes adjacent collector and local roadways.

[2] Transportation includes interstate highways, freeways, multilane highways, and principal arterials.

[3] Net environmental benefit discount applied to purchase, see RAC System Summary Report, section 4.3.